SONY

3-756-672-**24** (1)

Video Cassette Recorder

Operating Instructions

SLV-R1000

S VHS Hi-Fi

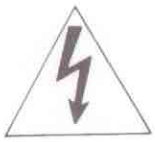
VCR Plus+

© 1993 by Sony Corporation

WARNING

To prevent fire or shock hazard, do not expose the unit to rain or moisture.

CAUTION
RISK OF ELECTRIC SHOCK
DO NOT OPEN
CAUTION : TO REDUCE THE RISK OF ELECTRIC SHOCK,
DO NOT REMOVE COVER (OR BACK).
NO USER-SERVICEABLE PARTS INSIDE.
REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.



This symbol is intended to alert the user to the presence of uninsulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.

This symbol is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

This English language instruction manual covers both the Canadian and U.S.A. models of the SLV-R1000.
The models are the same with the exception of the MENU screen, where LANGUAGE option allows you to select either French or English as your on-screen language. (See page 17 for details)

Owner's Record

The model number is located at the front and rear of the unit and the serial number is on the top. Record the serial number in the space provided below. Refer to these numbers whenever you call upon your Sony service dealer regarding this product.

Model No. SLV-R1000 Serial No. _____

For the Customers in the U.S.A.

CAUTION
You are cautioned that any changes or modifications not expressly approved in this manual could void your authority to operate this equipment.

Note
This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:
- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

Caution
TO PREVENT ELECTRIC SHOCK, DO NOT USE THIS POLARIZED AC PLUG WITH AN EXTENSION CORD, RECEPTACLE OR OTHER OUTLET UNLESS THE BLADES CAN BE FULLY INSERTED TO PREVENT BLADE EXPOSURE.

NOTE TO CATV SYSTEM INSTALLERS IN THE U.S.A.:
This reminder is provided to call the cable TV system installer's attention to Article 820-40 of the NEC that provides guidelines for proper grounding and, in particular, specifies that the cable ground shall be connected to the grounding system in the building, as close to the point of cable entry as practical.

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Precautions

Safety

- Operate the unit only on 120 V AC, 60 Hz.
- If anything falls into the cabinet, unplug the unit and have it checked by qualified personnel before operating it any further.
- One blade of the plug is wider than the other for the purpose of safety and will fit into the power outlet only one way. If you are unable to insert the plug fully into the outlet, contact your dealer.
- Unplug the unit from the wall outlet if you do not intend to use it for an extended period of time. To disconnect the cord, pull it out by the plug, never by the cord.

Installation

- Allow adequate air circulation to prevent internal heat build-up.
- Do not place the unit on surfaces (rugs, blankets, etc.) or near materials (curtains, draperies) that may block the ventilation slots.
- Do not install the unit near heat sources such as radiators or air ducts, or in a place subject to direct sunlight, excessive dust, mechanical vibration or shock.
- Do not install the unit in an inclined position. It is designed to be operated in a horizontal position only.
- Keep the unit and cassettes away from equipment with strong magnets, such as microwave ovens or large loudspeakers.
- Do not place heavy objects on the unit.

Operation

- When the unit is not in use, turn the power off to conserve energy and to extend its life.
- Remove and store video cassettes after recording or playback.

Cleaning

- Clean the cabinet, panel and controls with a dry, soft cloth, or a soft cloth slightly moistened with a mild detergent solution.
- Do not use any type of solvent, such as alcohol or benzine.

About the S-VHS System

The S-VHS system provides sharp, finely detailed pictures* through the S-VHS video signal recording/playback circuit and high quality S-VHS tape.
* Approximately 400 TV lines of horizontal resolution

This VCR can record and play back high quality pictures when you use tapes bearing the S-VHS mark. The unit also can record and play back tapes bearing the VHS mark.

On the recording/playback format and the types of video cassettes to be used
Before you begin, check to see which recording/playback format (S-VHS or VHS) you will use, referring to the following table.

	Tape used	Recording/playback format
During recording	S-VHS tape	Setting of S-VHS switch ➡ "ON" → S-VHS "OFF" → VHS
	VHS tape	VHS format regardless of the S-VHS switch setting
During playback	Tape recorded in S-VHS format	Playing back on an S-VHS VCR ➡ **Automatically selected** A tape recorded in the S-VHS format will be played back in the S-VHS format. The tape recorded in the VHS format will be played back in the VHS format. Playing back on a VHS VCR ➡ **A tape recorded in the S-VHS format cannot be played back.** A tape recorded in the VHS format will be played back in the VHS format.
	Tape recorded in VHS format	VHS format

About Recording and Playback with this VCR

On recording and playback format
- This VCR bears the S-VHS mark.
- If you record TV programs with this VCR, the recorded pictures will be played back giving the horizontal resolution level of the TV.

On the cassettes used
- Use video cassettes bearing the S-VHS mark or the VHS mark.
- Video cassettes recorded in the VHS format can be played back on this VCR.
- Video cassettes recorded in the S-VHS format using this VCR cannot be played back on a VCR with the VHS mark only.
- Some video sources used in other countries cannot be played back on this VCR due to the differences in color systems.

Introduction

Using This Manual

This manual is divided into five chapters.
The chapters and their contents are as follows:

Preliminaries	**(page 2)**
Preparation	**(page 6)**
Basic Operations	**(page 29)**
Advanced Operations	**(page 48)**
Additional Information	**(page 62)**

If you are using your VCR for the first time, start from the section **"Hookups and Getting Started"** (page 6). This section explains how to hookup, set up, and operate your VCR so that you can start enjoying it right away.

For information about the VCR's basic operations, such as Playback (page 29), Recording TV Programs (page 34), or Timer Recording (page 37), see **Basic Operations**.

If you are already familiar with the basic operations, see **Advanced Operations**.

If you have any problems in operating the VCR, refer to **Troubleshooting**. If your VCR is in need of repair, contact your nearest Sony Service Center facility.

Conventions of this manual

This manual explains operations using the VCR Remote Commander. However, the buttons on the VCR with the same name or mark as those on the Remote Commander function exactly the same as those of the Remote Commander.

When you are reading through the manual, remember:

- Buttons and switches are shown in uppercase letters. Example: Press ▶ PLAY.
- Numbers in the illustrations correspond to numbers in the text.
- ⟵ indicates signal flow.
- Notes and cautions are enclosed in boxes.
- On-screen displays for the USA model are used to explain operations requiring on-screen menus.

Unpacking

Check that you have received the following accessories:

- Remote Commander RMT-V129A
- Size AA (R6) batteries (2)
- External antenna connector (1)
- 75-ohm coaxial cable with F-type connectors (1)
- AC power cord (1)
- Audio/video connecting cable (3 phono to 3 phono) (1)
- S VIDEO connecting cable (1)
- Cable Mouse (Cable Box Controller) (1)

Overview

High-quality picture

The S-VHS system gives you 400 lines of horizontal resolution, enabling you to obtain a high quality picture.

Features

- **VCR Plus+ system**
  Allows you to quickly and easily preset up to eight TV programs.
- **Cable box control**
  Allows your VCR to control channel selection on most cable boxes.
- **APC (Adaptive Picture Control) function**
  Automatically optimizes recording and playback performance by adjusting the video circuitry for each tape that you use.
- **Auto tracking function**
  Automatically adjusts the tracking condition for optimum picture quality.
- **Timer recordings of eight programs in a month**
  Recording of up to eight TV programs can be preset up to one month in advance.
- **DUAL MODE SHUTTLE ring**
  Allows quick access to a desired scene and playback at various speeds in forward and reverse directions.
- **Index function**
  The beginning of a desired scene can be located easily with the index search function.
- **Multi-brand TV control Remote Commander**
  The Remote Commander can control Sony and other manufacturer's TV sets.
- **Auto head cleaner**
  Cleans the video heads each time a cassette is inserted or ejected.

Editing

- **Flying erase head**
  Allows clean, concise editing with less noise.
- **Input connectors on the front panel**
  Allows easy connection to a camcorder.
- **Insert editing**
  Allows easy superimposition of pictures and/or sound onto a prerecorded cassette.
- **CONTROL L jack**
  Control L connection lets you easily perform tape editing.
- **CONTROL S INPUT jack**
  Allows remote control of this VCR by other Sony video equipment with a CONTROL S OUTPUT jack.

On-screen display

- **DISPLAY**
  Tape counter, cassette speed, operation mode, and remaining cassette length can be displayed on the TV screen.
- **TIMER SET/CHECK display**
  Timer recording settings can be set and checked by referring to the TV screen.
- **ON SCREEN HELP message**
  The VCR gives a message on screen with a beep tone to warn that you have attempted an incorrect operation.

VCR Plus+ and PlusCode are trade marks of Gemstar Development Corp.
VCR Plus+ system is manufactured under license from Gemstar Development Corporation.

Hookups and Getting Started

Before you can use your VCR for the first time, you need to connect it to your TV and set it up to receive programs for viewing and recording. This section explains how to hook up, set up, and operate your VCR so that you can start enjoying it right away. There are, however, many types of TVs available and many different ways in which your TV can be hooked up. As a result, this manual describes several ways your VCR can be connected.

To hook up your VCR so that it works best for you, first scan through the table below. Then use the accompanying diagrams and procedures on the following pages to complete your VCR's connections.

If you ...	Use	Refer to
Have Audio/Video Inputs on your TV.	Hookup 1 first, then proceed.	Page 7
Have a cable box.	Hookup 2. TV signal → Cable Box → VCR	Page 8
Have cable, but don't have a cable box.	Hookup 3. TV signal → VCR	Page 10
Have a cable box that cannot be controlled by the VCR's cable box control feature.	Hookup 3 or 4, (or contact your cable company. They may be able to supply a compatible cable box.) TV signal → Cable Box → VCR	Pages 10 or 12
Have an antenna, not cable TV.	Hookup 5. TV signal → VCR	Page 14

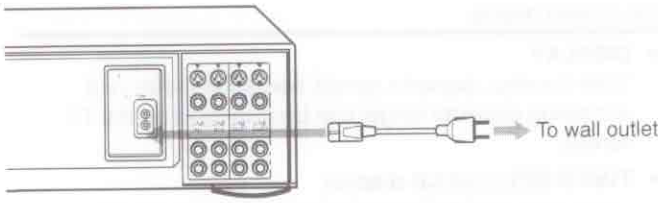
After you've completed the connections, follow the instructions for setup, including VCR Plus+ setup. (During setup, if you need more details of the procedures described, page numbers are provided where you can find complete, step-by-step instructions.)

After you've completed the setup, you're ready to use your VCR. Follow the instructions provided in "To Watch the TV," "To Watch the VCR," and "To Record A Program" for your specific hookup.

(Again, if you need step-by-step instructions, page numbers are provided where you can find this information.)

Before making the connections, check the following points:

- Turn off the power to the VCR and TV.
- Do not connect the AC power cord until all of the connections are completed.



- Make connections firmly. Loose connections may cause picture distortion.
- If your TV doesn't match any of the examples provided, consult your nearest Sony dealer or qualified technician.

Caution

Connections between the VCR VHF/UHF OUT connector and the antenna terminals of a TV receiver should be made only as shown in the instructions. Failure to do so may result in operation that violates the regulations of the Federal Communications Commission regarding the use and operation of RF devices. Never connect the output of the recorder to an antenna or make simultaneous (parallel) antenna and recorder connections at the antenna terminals of your receiver.

Hookup 1

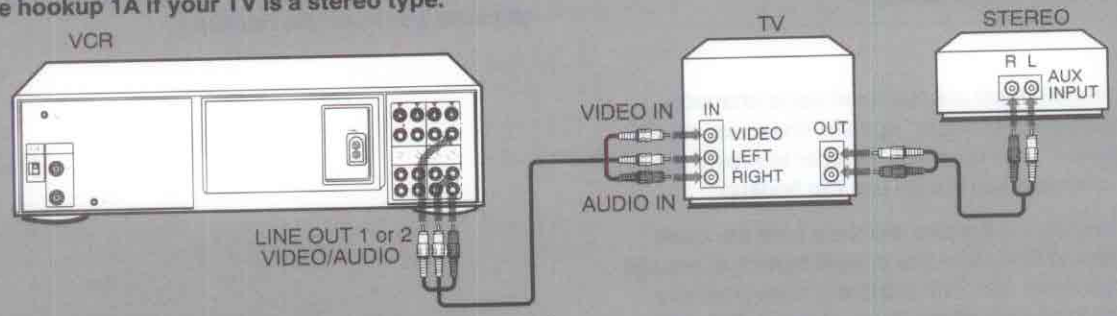
Audio/Video (A/V) Hookup

If your TV has audio/video (A/V) input jacks, you will get a better picture and sound if you hook up your VCR using these connections. In addition, for a true "home theater" experience, you should connect the audio outputs of your VCR or TV to your stereo system.

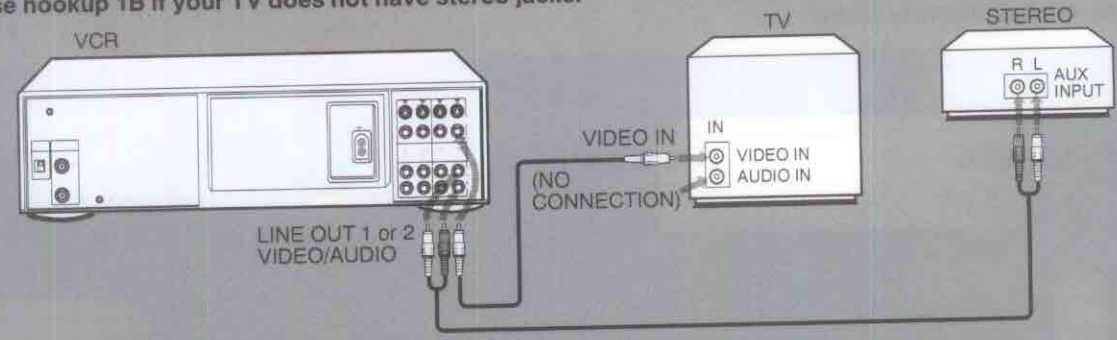
If your TV doesn't have A/V inputs, see the following pages for antenna or cable hookup.

If you intend to use the VCR for playback only, you're finished after you've made these connections. If you want to record off-air or off your cable TV system, please do the A/V hookup on this page first, then proceed to the following pages for antenna or cable hookup.

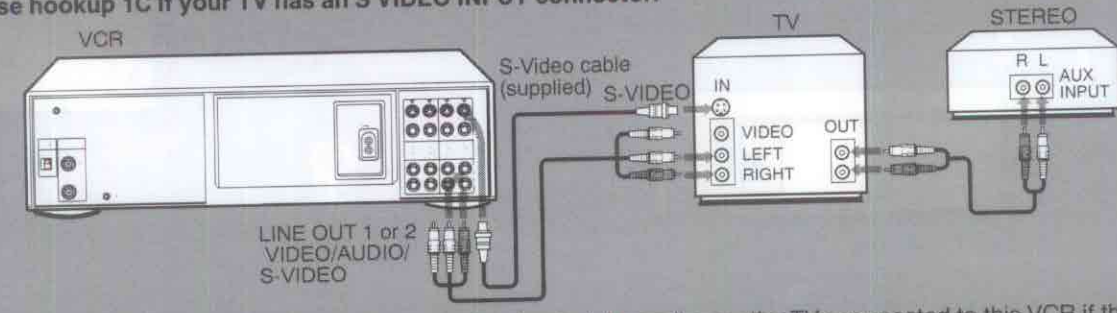
1A Use hookup 1A if your TV is a stereo type.



1B Use hookup 1B if your TV does not have stereo jacks.



1C Use hookup 1C if your TV has an S VIDEO INPUT connector.



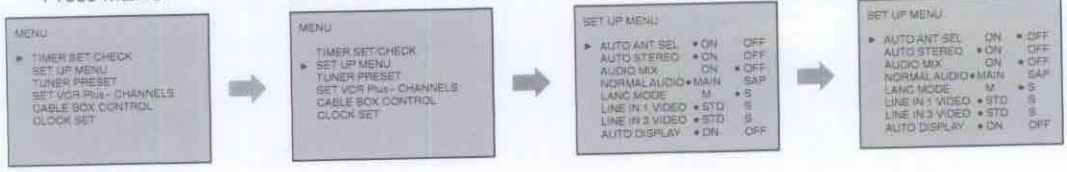
Note: Since it is possible that the picture quality is deteriorated depending on the TVs connected to this VCR if the video cable and the S-Video cable are connected at the same time, connect the S-Video cable only.

After you've hooked up your TV using the A/V connections, use the following procedure to set up and use the VCR with your TV.

A/V Setup & Operation

Set AUTO ANT SEL to OFF.

Press MENU. → Select SET UP MENU. → Select AUTO ANT SEL. → Set to OFF.



Details are on page 27.

Hookup 2 – Using VCR Cable Box Control

Cable Hookup

Recommended Use:
This hookup is recommended for most cable systems. It allows the VCR's cable box control feature to control the channel on the cable box, simplifying the recording process. You should use this hookup if you have a cable box, especially if your cable company "scrambles" all or most channels.

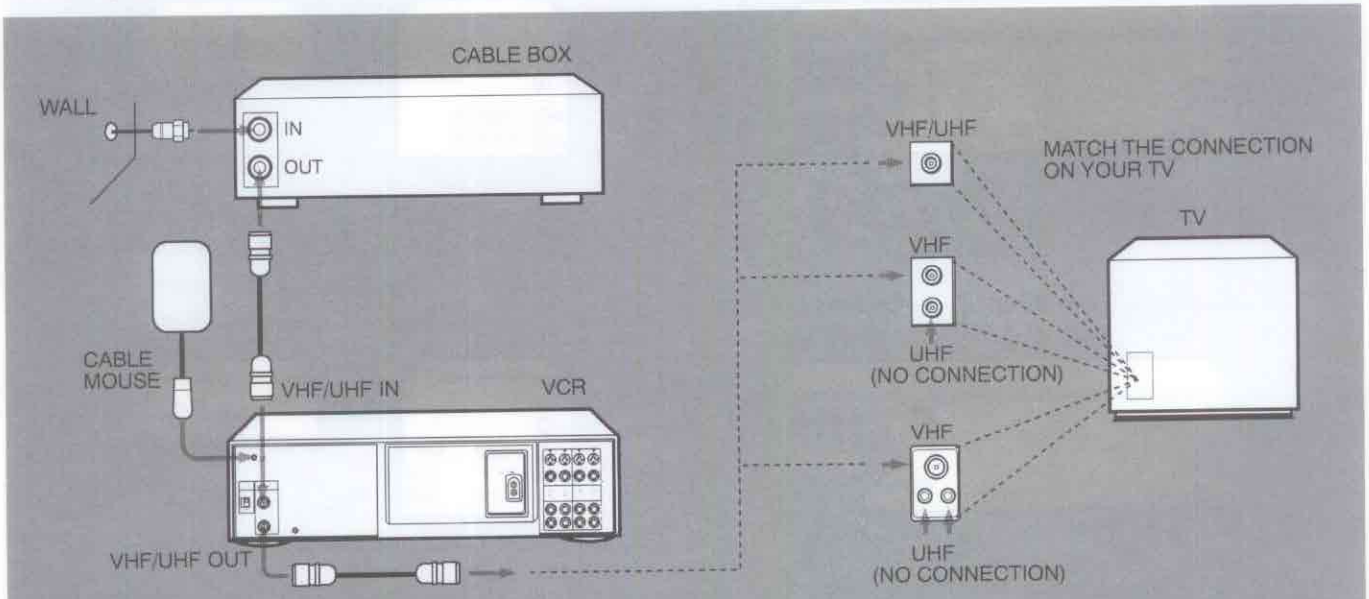
Background

This VCR can record most unscrambled cable channels. Some cable systems "scramble" specific channels, usually premium or pay-per-view channels. In order to record these "scrambled" channels you should use this hookup.

This hookup simplifies recording channels from the cable box, by using the VCR's cable box control feature to change channels on the cable box. The cable box control feature allows the VCR to change channels on most cable boxes that are capable of infrared remote control.

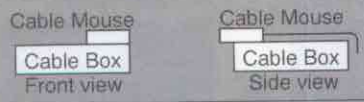
A list of compatible cable boxes is on page 26. If, after checking your setup, you are sure that the VCR will not control your cable box, contact your cable company. They may be able to supply a compatible cable box.

If your cable company cannot supply a compatible cable box, and your cable system only "scrambles" a few channels, you must use Hookup 4.



Cable Mouse Hookup

Position the "CABLE MOUSE" on the cable box as shown below. Make sure that the front of the "CABLE MOUSE" projects out in front of the cable box. Remove the protective film from the double-side tape to stick the "CABLE MOUSE" to the cable box.



For best results, position the cable box away from the VCR.

What You Can and Can't Do With This Hookup

What You Can Do

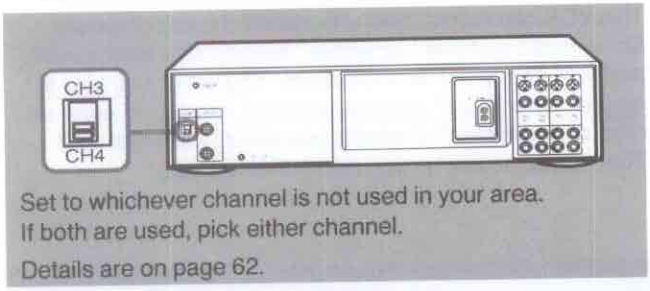
- Record any channel by selecting the channel on the cable box from your VCR.

What You Can't Do

- Record with the cable box turned off.
- Record one channel while watching another channel.

VCR Setup (Simple Cable)

1 Set the RF UNIT on the VCR's rear panel to CH3 or CH4.
If you made A/V connections, skip this step.

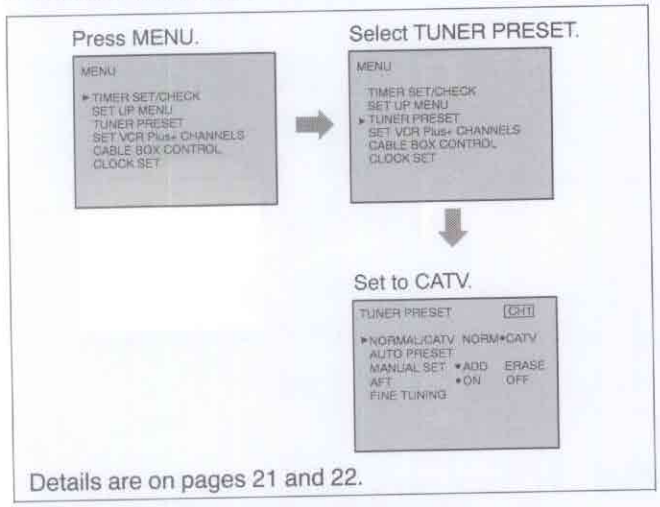


Set to whichever channel is not used in your area.
If both are used, pick either channel.

Details are on page 62.

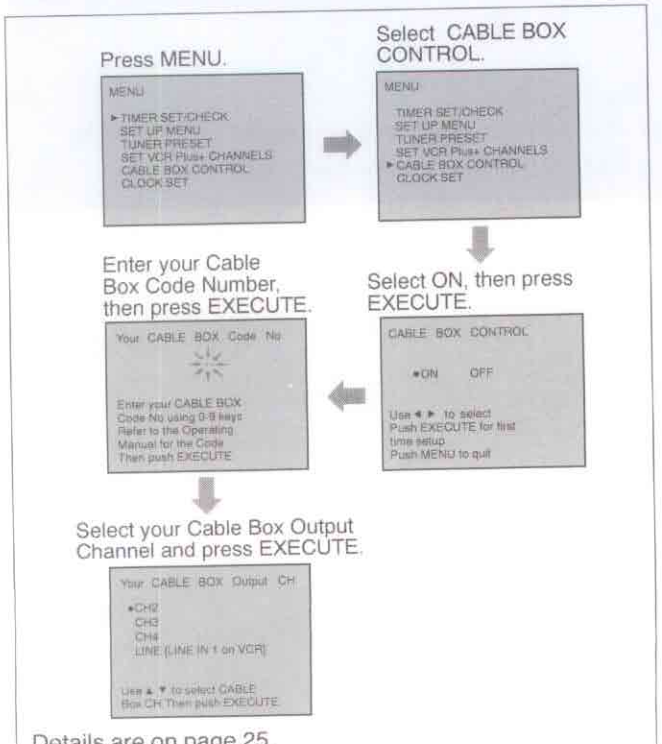
2 Switch on your cable box.

3 Set NORMAL/CATV to CATV.



Details are on pages 21 and 22.

4 Set the CABLE BOX CONTROL to ON.

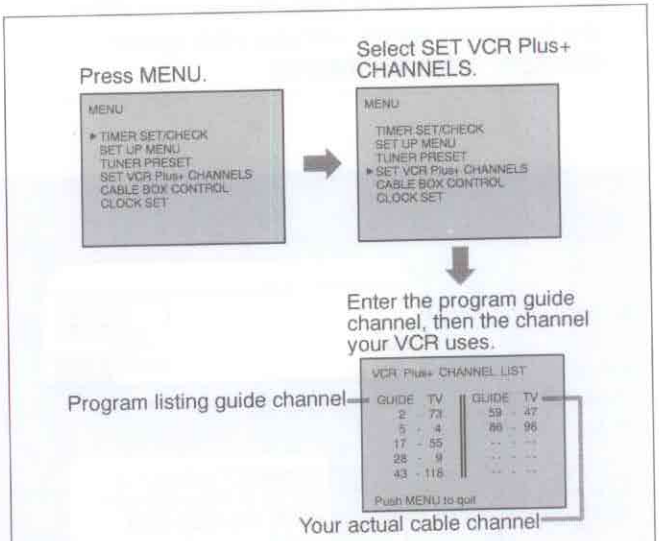

Press MENU.
Select CABLE BOX CONTROL.
MENU
►TIMER SET/CHECK
SET UP MENU
TUNER PRESET
SET VCR Plus+ CHANNELS
CABLE BOX CONTROL
CLOCK SET
Enter your Cable Box Code Number, then press EXECUTE.
Your CABLE BOX Code No.
Enter your CABLE BOX Code No. using 0-9 keys. Refer to the Operating Manual for the Code. Then push EXECUTE.
Select ON, then press EXECUTE.
CABLE BOX CONTROL
•ON OFF
Use ◄ ► to select. Push EXECUTE for first time setup. Push MENU to quit.
Select your Cable Box Output Channel and press EXECUTE.
Your CABLE BOX Output CH
•CH2
CH3
CH4
LINE (LINE IN 1 on VCR)
Use ▲ ▼ to select CABLE Box CH. Then push EXECUTE.

Details are on page 25.

VCR Plus+ Channel Setup

1 Find the VCR Plus+ Channel Listing in your program guide. For details, see page 44.

2 If the channels in the program guide are different from the channels that you actually use on your TV, set the channels that are different as follows.


Press MENU.
Select SET VCR Plus+ CHANNELS.
MENU
►TIMER SET/CHECK
SET UP MENU
TUNER PRESET
SET VCR Plus+ CHANNELS
CABLE BOX CONTROL
CLOCK SET
Enter the program guide channel, then the channel your VCR uses.
Program listing guide channel
VCR Plus+ CHANNEL LIST
GUIDE TV GUIDE TV
2 - 73 59 - 47
5 - 4 86 - 96
17 - 55 -- - --
28 - 9 -- - --
43 - 118 -- - --
Push MENU to quit
Your actual cable channel

Details are on page 45.

To Watch the TV

1 Turn your VCR off, or press the VCR's TV/VTR button until the VTR indicator in the display window goes off.
2 Switch on your cable box.
3 Tune the TV to the cable box output channel (usually 2, 3, or 4).
4 Select the channel that you want to watch with your cable box.

To Watch the VCR

1 Tune the TV to CH3 or CH4, (or to A/V input if you made A/V connections).
2 Insert a cassette and press ► PLAY.

Details are on page 30.

To Record A Program

1 Switch on the cable box.
2 Press VCR Plus+ on the Remote Commander.
3 Enter the program's PlusCode number.
4 Press ONCE, DAILY, or WEEKLY on the Remote Commander.
5 Insert a blank cassette.
6 Press TIMER REC on the Remote Commander.
7 Leave the cable box on.

Details are on page 46.

Hookup 3 – No Cable Box or Incompatible Cable Box, Few "Scrambled" Channels

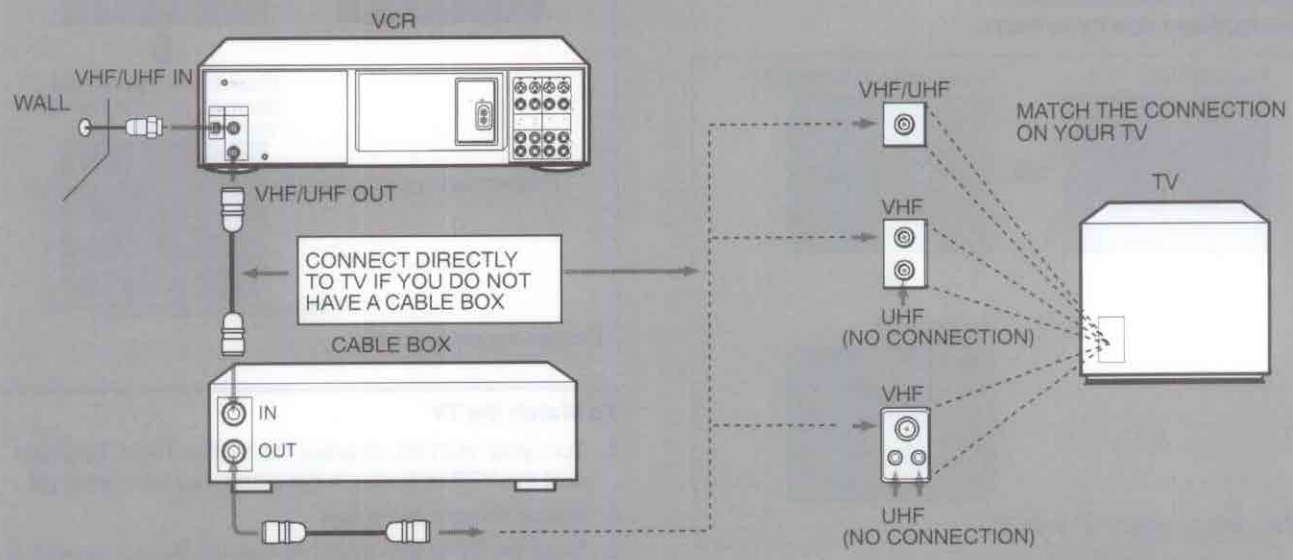
Cable Hookup

Recommended Use:
Use this hookup if you do not have a cable box.

Also use this hookup if your cable company cannot supply a cable box that is compatible with the VCR's cable box control feature, and your cable system "scrambles" only a few channels.

Background

This VCR can record most unscrambled cable channels. Some cable systems "scramble" specific channels, usually premium or pay-per-view channels. You will not be able to record "scrambled" channels with this hookup. In order to record "scrambled" channels you should use Hookup 2. The "cable mouse" is not used in this hookup.



What You Can and Can't Do With This Hookup

What You Can Do

- Record unscrambled channels directly, without using a cable box.

What You Can't Do

- Record scrambled channels that require a cable box.
- Use the VCR's cable box control feature.

VCR Setup

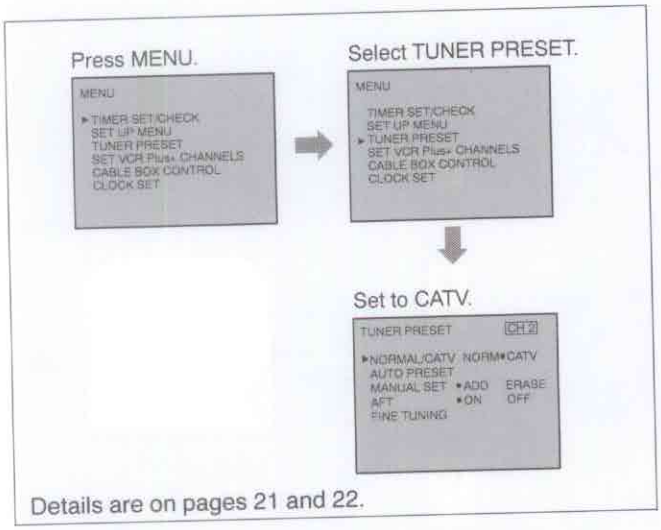
1 Set the RF UNIT on the VCR's rear panel to CH3 or CH4.
If you made A/V connections, skip this step.

Set to whichever channel is not used in your area.
If both are used, pick either channel.

Details are on page 62.

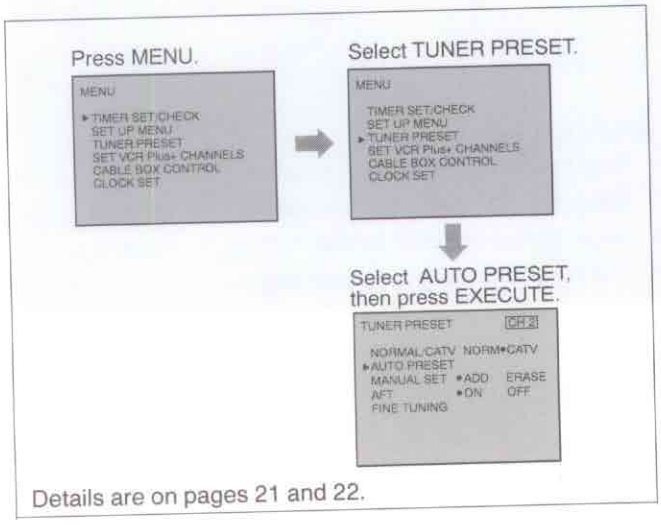
2 Set CABLE BOX CONTROL to OFF (this is the factory setting) using the on-screen MENU.

3 Set NORMAL/CATV to CATV.



Details are on pages 21 and 22.

4 Preprogram the channels into the VCR.

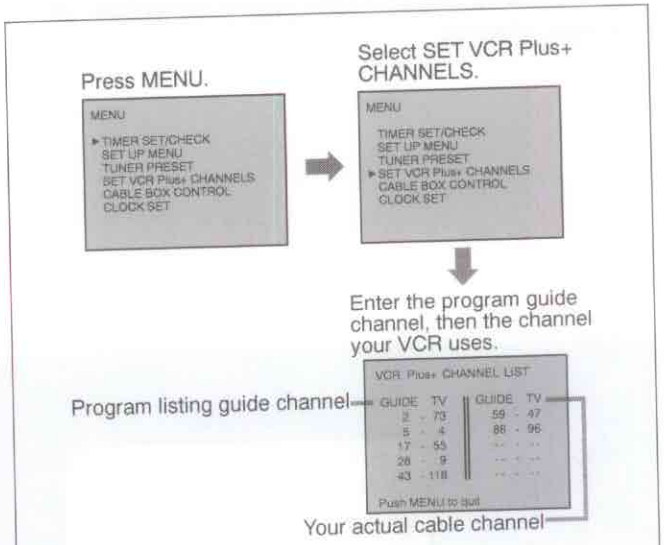


Details are on pages 21 and 22.

VCR Plus+ Channel Setup

1 Find the VCR Plus+ Channel Listing in your program guide. For details, see page 44.

2 If the channels in the program guide are different from the channels that you actually use on your TV, set the channels that are different as follows:



Details are on page 45.

To Watch the TV

1 Turn your VCR off, or press the VCR's TV/VTR button until the VTR indicator in the display window goes off.

2 Select the channel with your cable box (if you have one), or directly tune with your TV (if you don't).

To Watch the VCR

1a If you didn't use the A/V input:

- Turn ON the cable box.
- Select CH 3 or CH 4 on the **cable box** (whichever you set on the back of the VCR).
- Select the output channel of the cable box (usually 2, 3 or 4) on your TV.

1b If you made the A/V connections on page 7:
Set your TV to the A/V input.

2 Insert a cassette and press ► PLAY.

Details are on page 30.

To Record a Program

1 Press VCR Plus+ on the Remote Commander.

2 Enter the program's PlusCode number.

3 Press ONCE, DAILY, or WEEKLY on the Remote Commander.

4 Insert a blank cassette.

5 Press TIMER REC on the Remote Commander.

Details are on page 46.

Hookup 4 – Incompatible Cable Box, Many "Scrambled" Channels

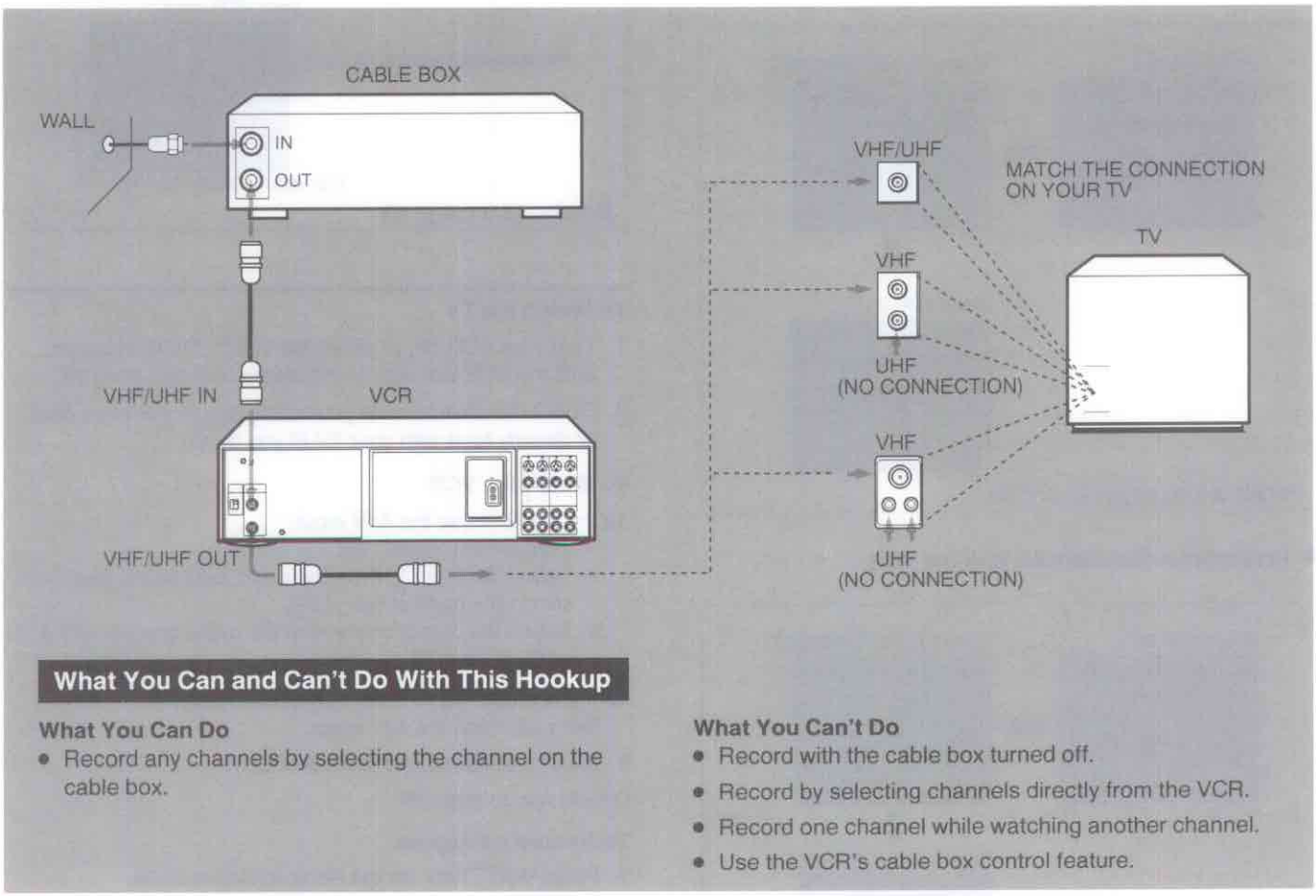
Cable Hookup

Recommended Use:
Use this hookup if your cable company cannot supply a cable box that is compatible with the VCR's cable box control feature, and your cable system "scrambles" all, or most, channels.

Background

This VCR can record most unscrambled cable channels. Some cable systems "scramble" specific channels, usually premium or pay-per-view channels.

If your cable company cannot supply a cable box that is compatible with the VCR's cable box control, and it is necessary to use a cable box because all or most channels are "scrambled", you must use this hookup. It will be necessary to set the cable box channel manually for each recording.
If your cable company cannot supply a compatible cable box, and your cable system only "scrambles" a few channels, use Hookup 3.



What You Can and Can't Do With This Hookup

What You Can Do

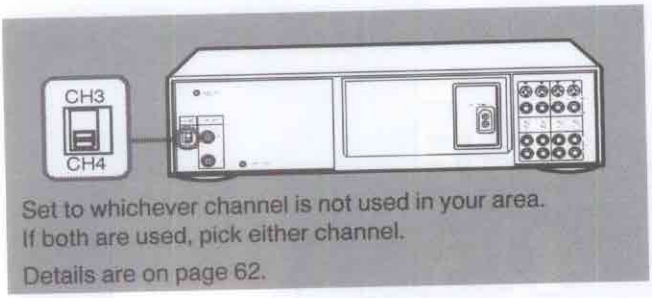
- Record any channels by selecting the channel on the cable box.

What You Can't Do

- Record with the cable box turned off.
- Record by selecting channels directly from the VCR.
- Record one channel while watching another channel.
- Use the VCR's cable box control feature.

VCR Setup

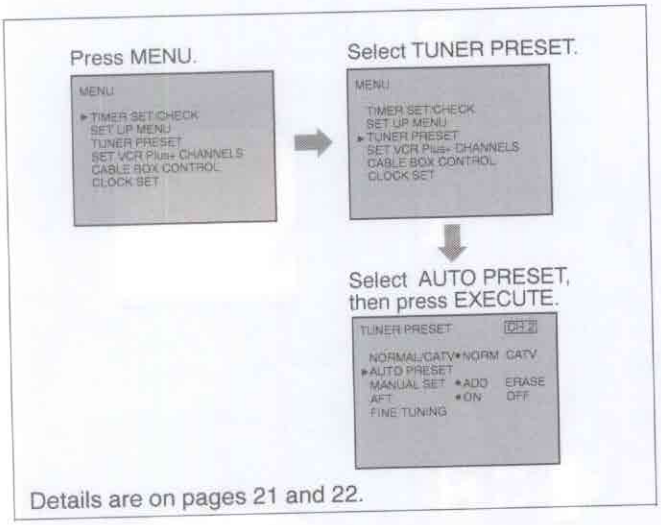
1 Set the RF UNIT on the VCR's rear panel to CH3 or CH4.
If you made A/V connections, skip this step.



Set to whichever channel is not used in your area.
If both are used, pick either channel.
Details are on page 62.

2 Switch on your cable box.

3 Preprogram the channels into the VCR.

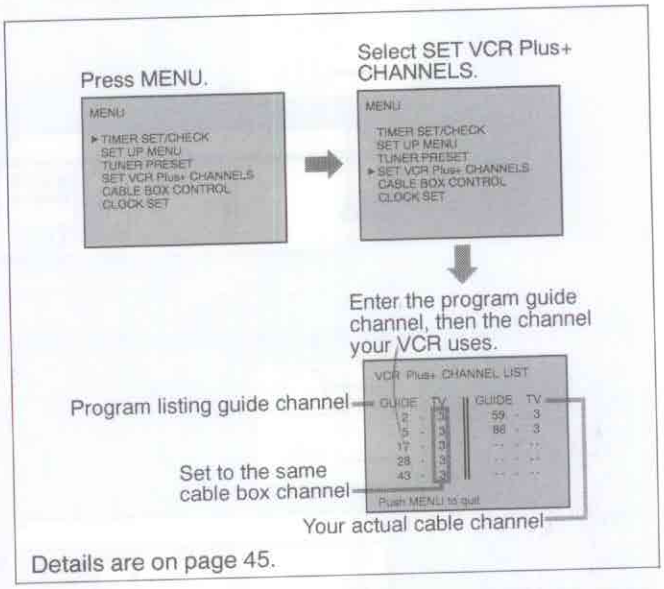


Details are on pages 21 and 22.

VCR Plus+ Channel Setup

1 Find the VCR Plus+ Channel Listing in your program guide. For details, see page 44.

2 For all channels that you want to record, set each channel to the channel that your cable box uses for its output (usually 2, 3, or 4), as follows:



Details are on page 45.

To Watch the TV

1 Turn your VCR off, or press the VCR's TV/VTR button until the VTR indicator in the display window goes off.
2 Switch on your cable box.
3 Tune the TV to the cable box output channel (usually 2, 3, or 4).
4 Select the channel that you want to watch with your cable box.

To Watch the VCR

1 Tune the TV to CH 3 or CH 4 (or to A/V input if you made A/V connections).
2 Insert a cassette and press ▶ PLAY.

Details are on page 30.

To Record a Program

1 Switch on the cable box.
2 Select the channel you wish to record on the cable box.
3 Press VCR Plus + on the Remote Commander.
4 Enter the program's PlusCode number.
5 Press ONCE, DAILY, or WEEKLY on the Remote Commander.
6 Insert a blank cassette.
7 Press TIMER REC on the Remote Commander.
8 Leave the cable box on.

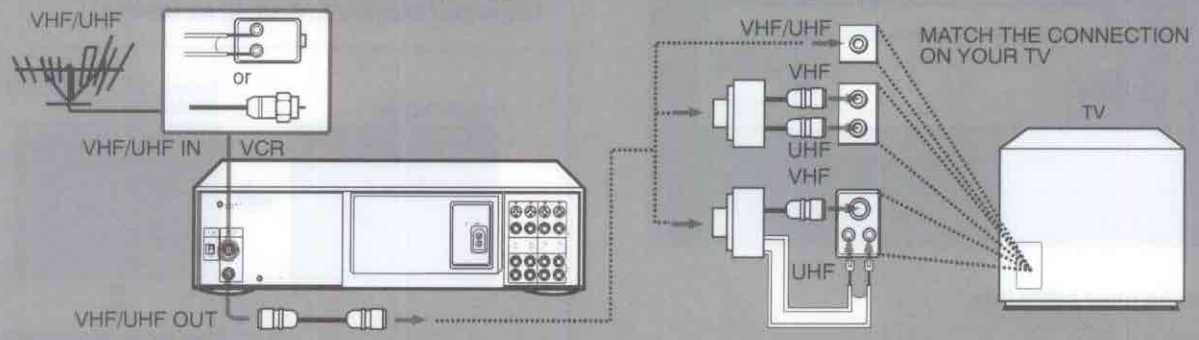
Details are on page 46.

Hookup 5

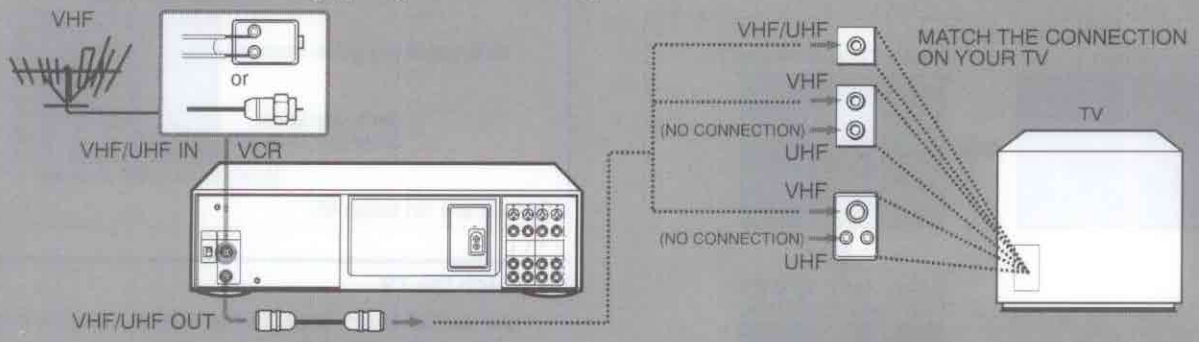
Antenna Hookup

Make the following connections if you're using an antenna (not cable TV).

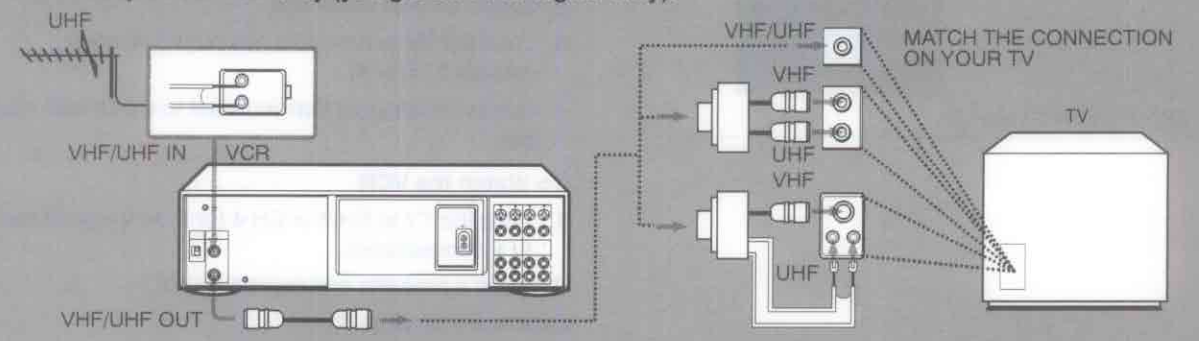
5A Use hookup 5A for VHF/UHF antenna (you get Ch 2-13 and Ch 14 or higher).



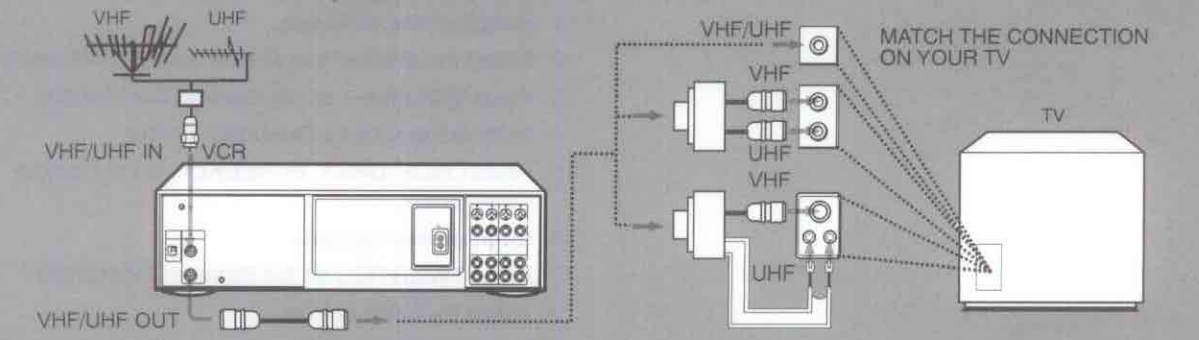
5B Use hookup 5B for VHF only (you get Ch 2 – 13 only).



5C Use hookup 5C for UHF only (you get Ch 14 or higher only).



5D Use hookup 5D if you're using separate VHF and UHF antennas.



Details are on page 64.

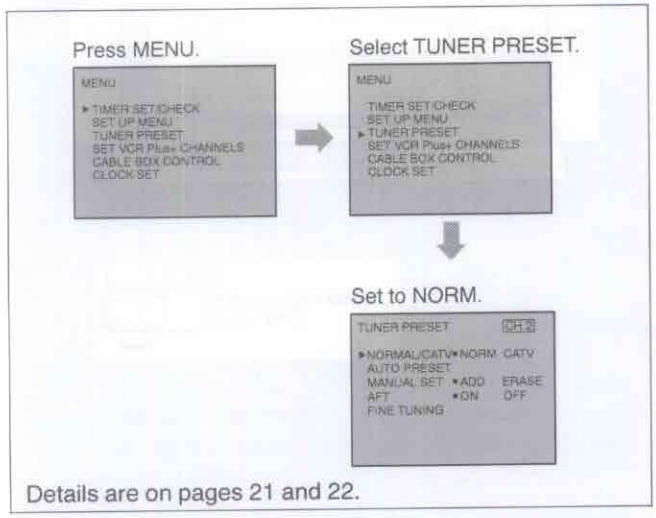
VCR Setup

1 Set the RF UNIT on the VCR's rear panel to CH3 or CH4.
If you made A/V connections, skip this step.

Set to whichever channel is not used in your area.
If both are used, pick either channel.

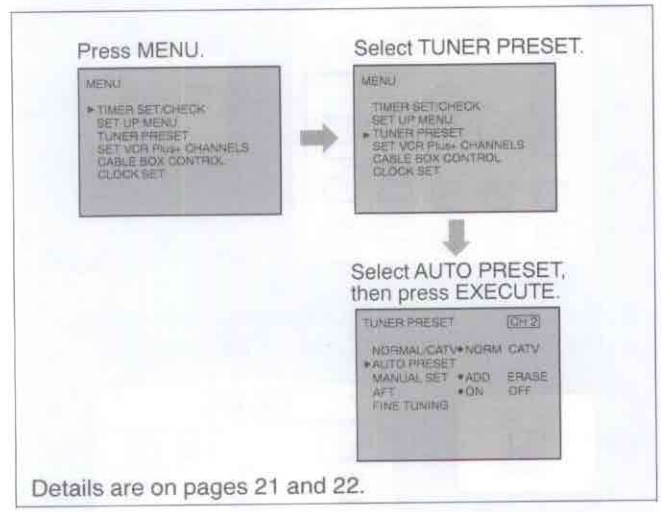
Details are on page 62.

2 Set NORMAL/CATV to NORM.



Details are on pages 21 and 22.

3 Preprogram the channels into the VCR.

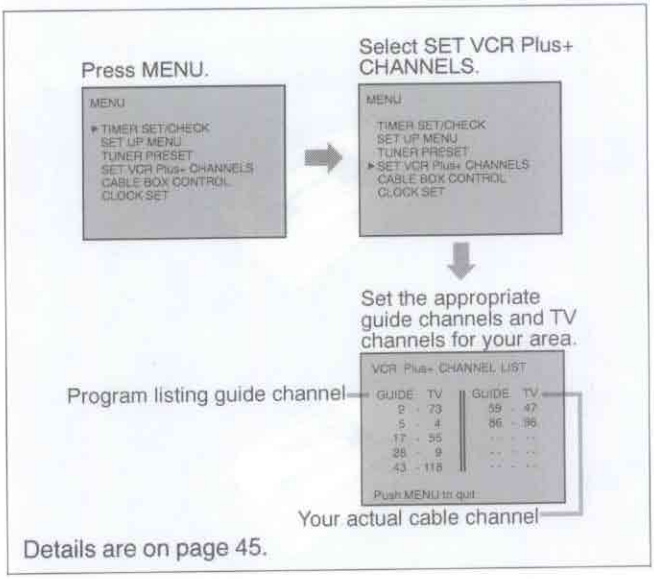


Details are on pages 21 and 22.

VCR Plus+ Channel Setup

1 Find the VCR Plus+ Channel Listing in your program guide.
For details, see page 44.

2 If the channels in the program guide are different from the channels that you actually use on your TV, set the channels that are different as follows:



Details are on page 45.

To Watch the TV

1 Turn your VCR off, or press the VCR's TV/VTR button until the VTR indicator in the display window goes off.
2 Tune the TV normally.

To Watch the VCR

1 Tune the TV to CH 3 or CH 4, whichever you set on the back of the VCR. (If you made the A/V connections on page 7, set your TV to the A/V input instead.)
2 Insert a cassette and press ► PLAY. If there's no picture on your TV, press the VCR's TV/VTR button until the VTR indicator comes on in the VCR display window.

Details are on page 30.

To Record a Program

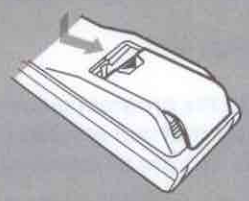
1 Press VCR Plus+ on the Remote Commander.
2 Enter the program's Plus Code number.
3 Press ONCE, DAILY, or WEEKLY on the Remote Commander.
4 Insert a blank casette.
5 Press TIMER REC on the Remote Commander.

Details are on pages 46.

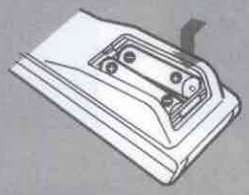
Preparing the Remote Commander/Selecting Language

Inserting Batteries

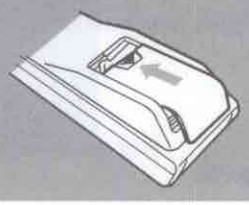
1 Open the lid.



2 Insert two size AA (IEC designation R6) batteries with the polarity lined up correctly.



3 Close the lid.



Notes on the handling of batteries

- With normal use, the batteries should last for approximately six months.
- If you do not use the Remote Commander for an extended period of time, remove the batteries to avoid possible damage from battery leakage.
- Do not use a new battery together with an old one.
- Do not mix different types of batteries.

Operating the VCR with the Remote Commander

Set the TV / VTR remote control selector at the top of the Remote Commander to "VTR".

If you are using a Sony TV

You can use the VCR's Remote Commander to operate the TV. When doing this, slide the TV / VTR remote control selector to "TV". Buttons on the Remote Commander with a dot (•) on or beside them can be used to operate your TV. To operate the VCR, return the TV / VTR remote control selector to "VTR".

How to Use the Remote Commander

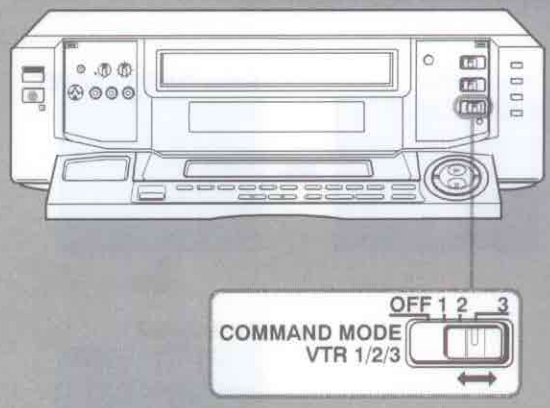
When you operate the VCR using the Remote Commander, point it at the remote sensor located on the VCR. For the location of the remote sensor, see "Identifying the Parts and Controls" on page 65.

When using the Remote Commander to change channels on a cable box, with the VCR's Cable box control feature turned on, point the Remote Commander at the VCR, not the cable box. For best results, separate the VCR and cable box.

Setting the Command Mode

You can select three different positions for the Command Mode setting.

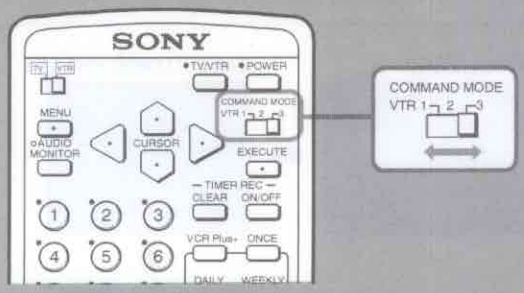
1 Set the COMMAND MODE VTR 1/2/3 selector on the VCR to "VTR 3".



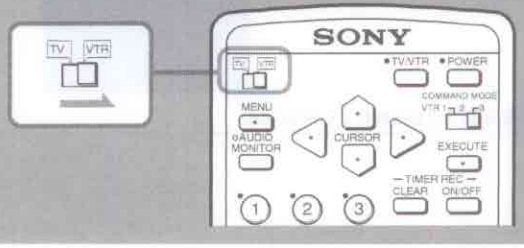
Note

If you set the COMMAND MODE VTR 1/2/3 selector on the VCR to "OFF", you can no longer control this VCR from any other Sony Remote Commanders.

2 Set the COMMAND MODE VTR 1/2/3 selector on the Remote Commander to "VTR 3".



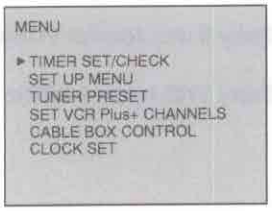
3 Set the TV / VTR remote control selector on the Remote Commander to "VTR".



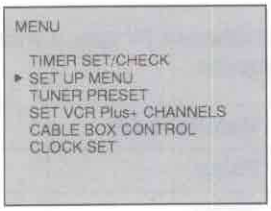
Selecting Language (Only for Canadian version)

You can set your VCR to display screen information in either English or French.

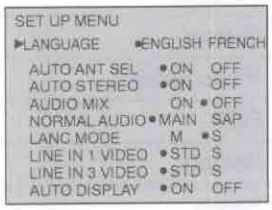
1 Press MENU
The main MENU appears.



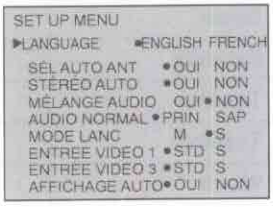
2 Press ▲ or ▼ to move the cursor to SET UP MENU.



3 Press EXECUTE.
The SET UP MENU screen appears.


SET UP MENU
►LANGUAGE •ENGLISH FRENCH
AUTO ANT SEL •ON OFF
AUTO STEREO •ON OFF
AUDIO MIX ON •OFF
NORMAL AUDIO •MAIN SAP
LANG MODE M •S
LINE IN 1 VIDEO •STD S
LINE IN 3 VIDEO •STD S
AUTO DISPLAY •ON OFF

4 Press ◄ or ► to select "ENGLISH" or "FRENCH".

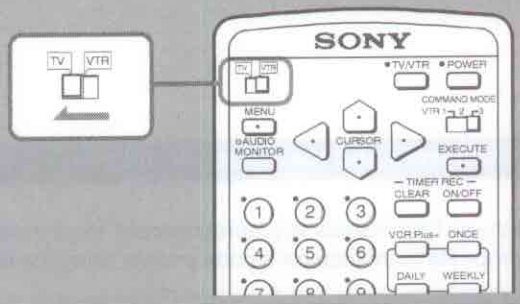

SET UP MENU
►LANGUAGE •ENGLISH FRENCH
SÉL AUTO ANT •OUI NON
STÉRÉO AUTO •OUI NON
MÉLANGE AUDIO OUI •NON
AUDIO NORMAL •PRIN SAP
MODE LANG M •S
ENTRÉE VIDÉO 1 •STD S
ENTRÉE VIDÉO 3 •STD S
AFFICHAGE AUTO •OUI NON

5 Press EXECUTE.

Setting the Remote Commander to Control Other Manufacturers' TV Sets

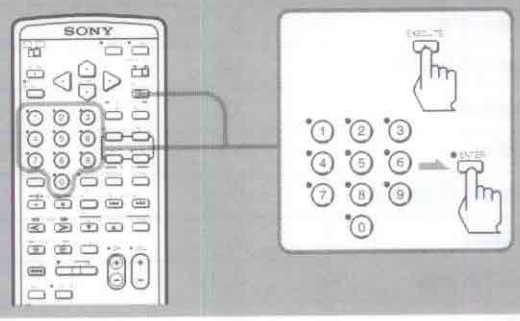
The following steps show you how to use your Remote Commander to set the appropriate manufacturer's code number for a non-Sony TV. (Code numbers are listed on the next page.)

1 Set the TV / VTR remote control selector to "TV".



2 While pressing the EXECUTE button, press the manufacturer's code number and the ENTER button.

You can now use the POWER, VOL +/–, CHANNEL +/– and the TV/VTR buttons on your Remote Commander to operate the TV.



NOTES:

- The TV/VTR button may not function, depending on the manufacturer. If this problem occurs, use your TV's remote control unit.
- If more than one code number is listed, try entering them one at a time until you find the one that works with your TV.
- If you enter a new code number, the code number previously entered will be erased.
- If you release the EXECUTE button before pressing the ENTER button, the setting will be cancelled.
- Some manufacturers may use a different remote control system from the one programmed to work with your VCR. If this is the case, and you are unable to operate the TV with your Remote Commander, use the TV's remote control unit instead.
- When you replace the batteries in the Remote Commander, the code number automatically resets to 1 (SONY). Reset the appropriate code number, if necessary.

Controlling Other Sony Video Equipment If Other Sony Video Equipment Has a COMMAND MODE Selector:

1 **Set the Remote Commander COMMAND MODE 1/2/3 selector to a position other than the one you selected for this VCR.**

2 **Set the COMMAND MODE selector of any other video equipment to the same position you selected in step 1.**

If other Sony video equipment does not have a COMMAND MODE selector, you can control other Sony video equipment using the following COMMAND MODE settings:

Infrared remote controlled Sony Betamax VCRs: position 1
(Some may not be controlled in this mode.)

Sony 8 mm format VCRs: position 2

Sony VHS format VCRs: position 3

Manufacturers and their Code Numbers

Your Remote Commander is preprogrammed for use with a number of different TV sets. If your TV is listed in the table below, set the appropriate manufacturer's code prior to using the Remote Commander.

Manufacturer	Code Number	Manufacturer	Code Number
SONY	**1**	Philco	3, 4
Akai	4	Philips	8
AOC	4	Pioneer	16
Centurion	12	Portland	3
Coronado	3	Quasar	6
Curtis-Mathes	12	Radio Shack	5, 14
Daytron	12	RCA	4, 10
Fisher	11	Sampo	12
General Electric	6, 10	Sanyo	11
Hitachi	2, 3	Scott	12
J.C.Penney	4, 12	Sears	7, 10, 11
JVC	9	Sylvania	8, 12
KMC	3	Teknika	3, 8, 14
Magnavox	3, 8, 12	Toshiba	7
Marantz	4, 13	Wards	3, 4, 12
MGA/Mitsubishi	4, 12, 13, 17	Yorx	12
NEC	4, 12	Zenith	15
Panasonic	6	Sharp	3, 5, 18

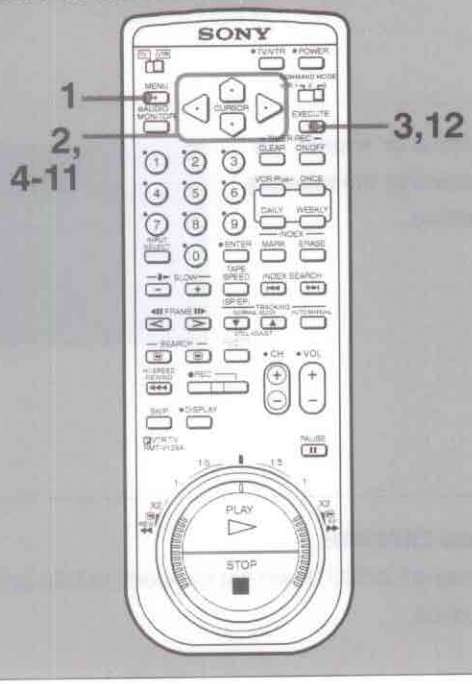
Setting the Time and Date

You can set the VCR time and date on the TV screen using the Remote Commander.

Example of Time and Date Setting

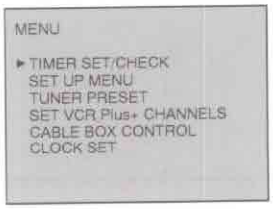
Example: To set to 3:32 pm, July 4, 1993

Use ▲ and ▼ to move the cursor.
Use ◄ and ► to select the items.

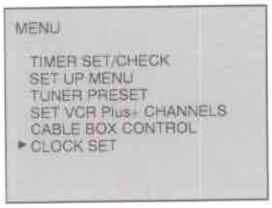


1 Press MENU.

The main MENU appears.

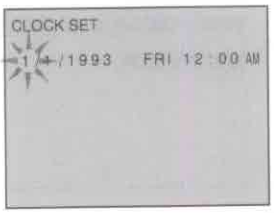


2 Press ▲ or ▼ to move the cursor (►) to CLOCK SET.

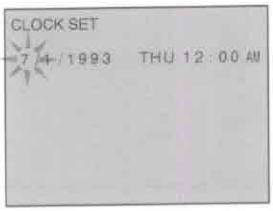


3 Press EXECUTE.

"1/1 1993 FRI 12:00 AM" is displayed. The leftmost 1, in the "month" position, flashes.



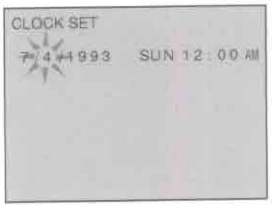
4 Press ▲ or ▼ until "7" appears in the month position.



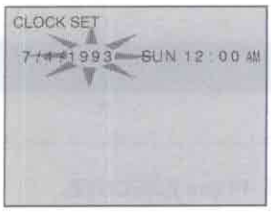
5 Press ► to make the next number in the "day" position flash.

6 Press ▲ or ▼ until "4" appears in the "day" position.

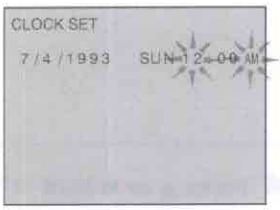
The day of the week is set automatically.



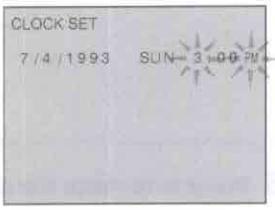
7 **Press ▶ to make the "year" position flash and press ▲ or ▼ to change the year.**
If you want to leave the year indication unchanged, just press ▶.



8 **Press ▶ to make the "time" position flash.**

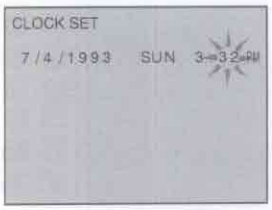


9 **Press ▲ or ▼ until "3 PM" appears.**



10 **Press ▶ to make the "minutes" position flash.**

11 **Press ▲ or ▼ until "32" appears in the minutes position.**



12 **Press EXECUTE.**
Pressing EXECUTE will set the clock to 3:32 pm 00 seconds.

NOTES:

- Do not set the time and date during timer-activated recording, timer recording standby or quick-timer recording.
- When the time and date clock is displayed, the clock keeps running as long as no changes are made. The seconds are not reset to 00 when you return to the original screen.

Presetting the Active Channels

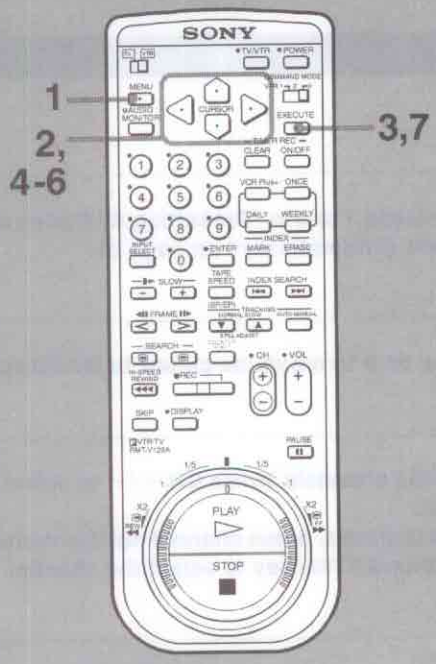
This VCR is capable of receiving VHF channels 2 to 13, UHF channels 14 to 69 and CATV channels 1 to 125. These channels can be preset using the Remote Commander and the TUNER PRESET display. First, we recommend that you preset the active channels in your area using the automatic preset mode. Then, if there are any unwanted channels, disable them manually. If you have already decided which channels you wish to preset on the VCR, set them directly using the channel number buttons.

Before presetting channels, check the following points:

- Turn on the VCR and the TV.
- If you have connected the TV and the VCR using the VHF/UHF OUT on the VCR only, make sure that the TV is set to the correct channel (CH 3 or CH 4) for the VCR. If you have connected the TV and the VCR using the LINE OUT, select the input for the VCR.
- Press TV/VTR so that the VTR indicator lights up in the display window on the VCR.
- Press INPUT SELECT so that the TUNER indicator appears in the display window on the VCR.
- It is not necessary to use the TUNER PRESET function if the CABLE BOX CONTROL is set to "ON." If you want to use the TUNER PRESET function, make sure the CABLE BOX CONTROL is set to "OFF."

Presetting All Receivable Channels Automatically

Use ▲ and ▼ to move the cursor.
Use ◀ and ▶ to select the items.



1 Press MENU.

The main MENU appears.

```
MENU
▶TIMER SET/CHECK
 SET UP MENU
 TUNER PRESET
 SET VCR Plus+ CHANNELS
 CABLE BOX CONTROL
 CLOCK SET
```

2 Press ▲ or ▼ to move the cursor (▶) to TUNER PRESET.

```
MENU
 TIMER SET/CHECK
 SET UP MENU
▶TUNER PRESET
 SET VCR Plus+ CHANNELS
 CABLE BOX CONTROL
 CLOCK SET
```

3 Press EXECUTE.

The TUNER PRESET menu is displayed.

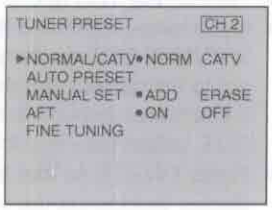
```
TUNER PRESET                CH 2
 NORMAL/CATV  •NORM  CATV
 AUTO PRESET
▶MANUAL SET   •ADD   ERASE
 AFT          •ON    OFF
 FINE TUNING
```

4 Press ▲ or ▼ to move the cursor to NORMAL/CATV.

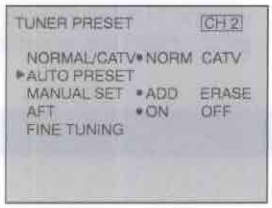
```
TUNER PRESET                CH 2
▶NORMAL/CATV  •NORM  CATV
 AUTO PRESET
 MANUAL SET   •ADD   ERASE
 AFT          •ON    OFF
 FINE TUNING
```

5 Press ◄ or ► to select "NORM" or "CATV".

NORM presets the VHF and UHF channels; CATV presets your cable TV channels. The lowest channel number, 2 for NORM and 1 for CATV, will appear on the screen.



6 Press ▲ or ▼ to move the cursor to AUTO PRESET.



7 Press EXECUTE.

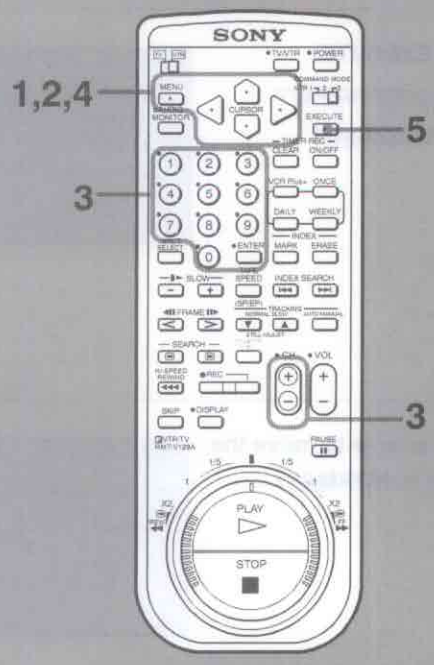
Receivable channels are preset in numerical sequence. When no more channels can be found, the presetting stops and the picture of the lowest numbered channel is displayed on the TV screen.

NOTE:
The VCR automatically exits from the TUNER PRESET menu if you don't proceed for more than one minute.

Presetting Desired Channels or Disabling Unwanted Channels

After automatic presetting, you can disable and/or add channels.

Use ▲ and ▼ to move the cursor.
Use ◄ and ► to select the items.

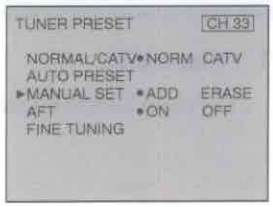


1 Follow steps 1 to 3 in "Presetting All Receivable Channels Automatically" on page 21.

2 Press ▲ or ▼ to move the cursor to MANUAL SET.

3 To disable channels, press CH +/− to select the channel.
To add channels, press channel number buttons (0 to 9) and then ENTER key to select the channel.

4 To disable channels, press ◄ or ► to select "ERASE".
To add channels, press ◄ or ► to select "ADD".



5 Press EXECUTE.

When you press CH +/−, the disabled channels are removed and the added channels are displayed.

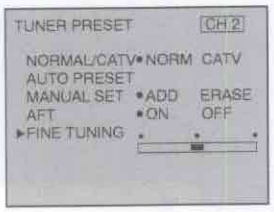
Fine-tuning

Normally, the Auto Fine Tuning (AFT) setting on the TUNER PRESET menu is set to "ON", and the AFT function fine-tunes the picture. If the picture of a channel is not acceptable, fine-tune it manually.

1 Display the TUNER PRESET menu referring to steps 1 to 3 in "Presetting All Receivable Channels Automatically" (page 21).

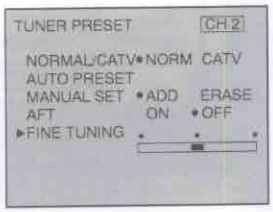
2 Press ▲ or ▼ to move the cursor to FINE TUNING.

The fine tuning indicator is displayed.

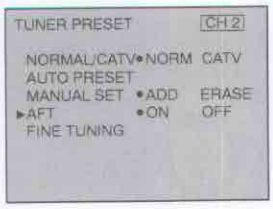


3 Press ◀ or ▶ to get a clearer picture.

The AFT ON/OFF automatically switches to "OFF".



4 If you cannot get a better picture, press ▲ or ▼ to move the cursor to AFT and select "ON". Then, press EXECUTE.



The FINE TUNING indicator

The FINE TUNING indicator shows the operable fine-tuning range and stops at the optimal point of reception. When a broadcast is received in an optimal condition, the indicator may not be at the center position.

Cable TV Channel Assignment

Cable TV systems use letters or numerals to designate the channels. To tune-in a CATV channel, refer to the chart below which shows the CATV channel numbers on this VCR and the corresponding CATV channel. Note that the channel number assignment shown in the chart may not correspond to the channel number used by your local cable company. Check with your local cable TV company for more information on the available channels.

Number of this VCR	1	2	...	13	14	15	16	17	18
Corresponding CATV channel	A-8	2	...	13	A	B	C	D	E

19	20	21	22	23	24	25	26	27	28	29	30	31	32
F	G	H	I	J	K	L	M	N	O	P	Q	R	S

33	34	35	36	37	...	94	95	96	97	98	99
T	U	V	W	W+1	...	W+58	A-5	A-4	A-3	A-2	A-1

100	...	125
W+59	...	W+84

This VCR is designed to correspond to the standard cable system. However, the cable TV services may vary from area to area. Your local cable TV company may adopt either the HRC 1 or IRC 2 cable system. This VCR is capable of receiving either of these cable systems in the best condition.

1) **HRC (Harmonic Related Carriers)**
All channels except for 5 and 6 are 1250 kHz lower than the standard cable system. Channels 5 and 6 are 750 kHz higher than the standard cable system.

2) **IRC (Incremental Related Carriers)**
All channels except for 5 and 6 are the same as the standard cable system. Channels 5 and 6 are 2000 kHz higher than the standard cable system.

FINE TUNING indicator for receiving HRC or IRC cable systems

Even when the signals are received in optimal condition, the FINE TUNING indicator will not stay at the center position for channels higher or lower than the standard cable system due to the difference in the frequency.

NOTE:

Many cable TV systems use scrambled or encoded signals for certain channels, usually premium or pay-per-view channels.
A cable box is necessary to receive scrambled channels.

Activating the Cable Box Control Function

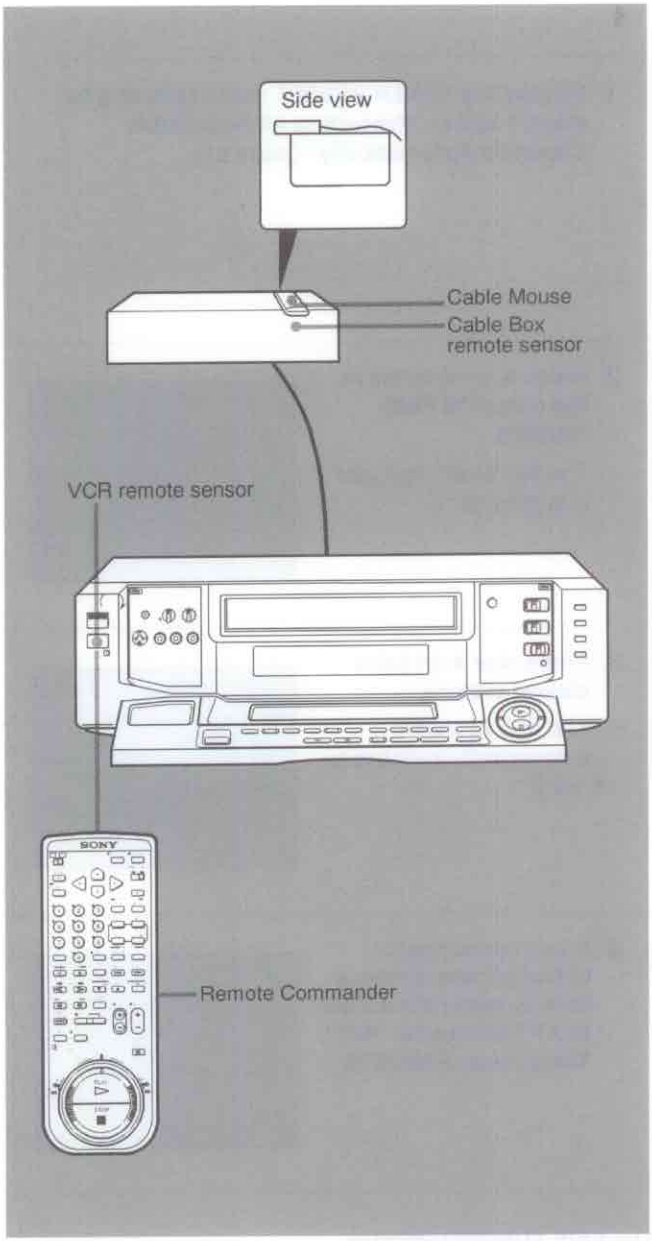
Your VCR includes a Cable Box Control feature that allows the VCR to control channel selection on most cable boxes.

Compatible cable box brands are shown on page 26.

The CABLE BOX CONTROL must be set to "ON", and the code number and the output channel must be set to match your cable box before you can use it. For details on connecting your cable box to the VCR to control the cable box with the Remote Commander, please refer to Hookup 2 on page 8.
When CABLE BOX CONTROL is set to "ON", the VCR will control the cable box channel for timer recording. In addition, you can use the VCR's Remote Commander to change channels on the cable box whenever the cable box and the VCR are turned on.

Note
Do not place the cable box on top of the VCR. For best results, place the cable box as far away from the VCR as possible.

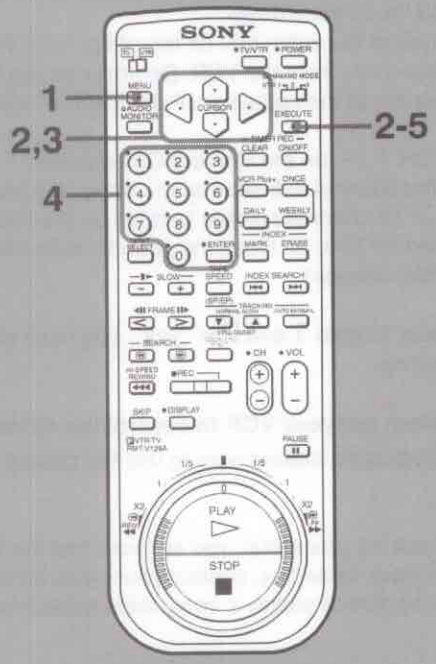
Note on setting the cable box and Cable Mouse
Make sure that the Cable Mouse is positioned near to and above the sensor on the cable box so that the signal from the Cable Mouse is received correctly.
The cable box should not be too close to the VCR.



Setting the Cable Box Control

To use the cable box control function, enter the cable box code number and select the cable box output channel as explained below.

Use ▲ and ▼ to move the cursor.
Use ◄ and ► to select items.



1 Press MENU.

The main MENU appears.

```
MENU
► TIMER SET/CHECK
  SET UP MENU
  TUNER PRESET
  SET VCR Plus+ CHANNELS
  CABLE BOX CONTROL
  CLOCK SET
```

2 Press ▲ or ▼ to move the cursor (►) to CABLE BOX CONTROL, then press EXECUTE.

```
MENU
  TIMER SET/CHECK
  SET UP MENU
  TUNER PRESET
  SET VCR Plus+ CHANNELS
► CABLE BOX CONTROL
  CLOCK SET
```

3 Press ◄ or ► to select "ON," then press EXECUTE.

```
CABLE BOX CONTROL
  •ON    OFF
Use◄ ► to select
Push EXECUTE for first
time setup
Push MENU to quit
```

4 Enter the cable box code number under CABLE BOX Code No. as listed in the chart on page 26, then press EXECUTE.

```
Your CABLE BOX Code No.
Enter your CABLE BOX
Code No using 0-9 keys
Refer to the Operating
Manual for the Code
Then push EXECUTE
```

5 Select the cable box output channel under CABLE BOX OUTPUT CH, then press EXECUTE.

```
Your CABLE BOX Output CH
  •CH2
   CH3
   CH4
   LINE [LINE IN 1 on VCR]
Use ▲ ▼ to select CABLE
Box CH.Then push EXECUTE
```

Cable box code number chart

In step 4 on page 25, enter the code number of your cable box as listed in the chart below.

Brand	IR Code No.
Hamlin	14, 15
Jerrold/General Instrument	1, 2, 3, 4
Oak	17, 18
Panasonic	12, 13
Philips	22
Pioneer	8, 9
Regal	14, 15
Regency	20
Scientific Atlanta	5, 6
Tocom	10, 11
Zenith	7

The VCR contains 42 cable box codes (1 – 42). If your cable box is not listed in the chart, it may be possible to control it using one of the other (1 – 42) codes. You may want to try other codes before calling your cable company to see if they can supply a cable box that is in the chart.

If your cable box is listed in the chart, but does not respond, first check the placement of the "Cable Mouse" (see page 24), and try placing the cable box and VCR away from each other (do not place the cable box directly on top of the VCR). If the cable box still does not respond, you can try other codes.

Checking the Cable Box Control Setting

Using the information provided below, check to make sure that you have made the correct Cable Box Control setting.

Note

Make sure to do the following when using a cable box.

- Tap the buttons on the Remote Commander lightly. Do not hold the buttons down.
- Do not place the cable box on top of the VCR. Position the cable box away from the VCR. Do not point the Remote Commander at the cable box. Point it at the VCR.

1 Press CH +/– on the Remote Commander.
Does the channel indicator on the cable box change?

2 Press all 10 channel number buttons on the Remote Commander (0 to 9). Does the channel indicator on the cable box change?

If the answer to both **1** and **2** is "yes", you have made the correct setting.

If you cannot get your VCR to control the cable box

Try the setup again making sure to use the correct code number.

If, after checking your setup, you are sure that the VCR will not control your cable box, contact your cable company. They may be able to supply a compatible cable box.

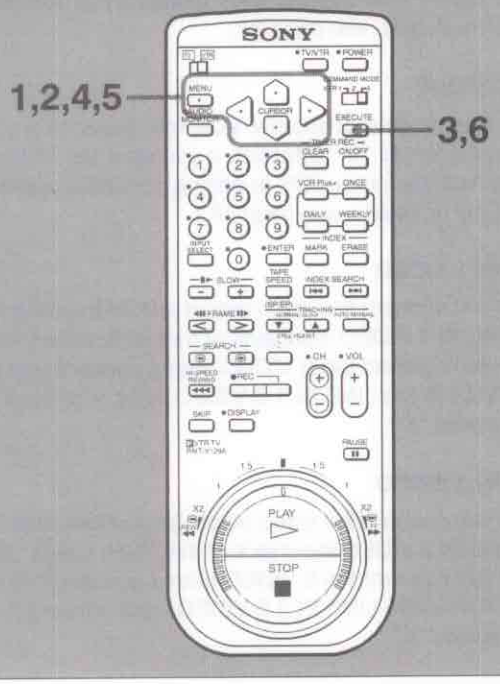
Note

Even if your cable box brand is listed, it is possible that the VCR may not control your specific cable box. This can happen if the cable box is very old or the cable box manufacturer has designed a new box with new channel code after your VCR was manufactured.
If this is the case, contact your cable company.
They may be able to supply a compatible cable box.

Using The SET UP MENU

Before using your VCR, make your preferred audio and video display choices from the SET UP MENU.

Use ▲ and ▼ to move the cursor.
Use ◄ and ► to select items.



1 Press MENU.

The main MENU appears.

```
MENU

►TIMER SET/CHECK
 SET UP MENU
 TUNER PRESET
 SET VCR Plus+ CHANNELS
 CABLE BOX CONTROL
 CLOCK SET
```

2 Press ▲ or ▼ to move the cursor (►) to SET UP MENU.

```
MENU

 TIMER SET/CHECK
►SET UP MENU
 TUNER PRESET
 SET VCR Plus+ CHANNELS
 CABLE BOX CONTROL
 CLOCK SET
```

3 Press EXECUTE.

The SET UP MENU appears.

```
SET UP MENU
  LANGUAGE●ENGLISH FRENCH
► AUTO ANT SEL   ●ON   OFF
  AUTO STEREO    ●ON   OFF
  AUDIO MIX        ON  ●OFF
  NORMAL AUDIO  ●MAIN  SAP
  LANC MODE        M   ●S
  LINE IN 1 VIDEO ●STD  S
  LINE IN 3 VIDEO ●STD  S
  AUTO DISPLAY   ●ON   OFF
```

4 Press ▲ or ▼ to move the cursor to the desired menu choice. (For Menu Choices, see the next page.)

```
SET UP MENU
  LANGUAGE●ENGLISH FRENCH
► AUTO ANT SEL   ●ON   OFF
  AUTO STEREO    ●ON   OFF
  AUDIO MIX        ON  ●OFF
  NORMAL AUDIO  ●MAIN  SAP
  LANC MODE        M   ●S
  LINE IN 1 VIDEO ●STD  S
  LINE IN 3 VIDEO ●STD  S
  AUTO DISPLAY   ●ON   OFF
```

5 Press ◄ or ► to move the dot (●) to the desired setting.

6 Press EXECUTE to return to the original screen.

The settings are stored. The displayed page is stored unless the power plug is disconnected.

Menu Choices

LANGUAGE (Canadian versions only)
You can preset your VCR to display screen information in either English or French.

AUTO ANT SEL (Automatic Antenna Selector)

- If your TV is connected only to VHF/UHF OUT on the VCR, set to "ON".

When playing back a cassette, the picture is automatically displayed on the screen simply by selecting the channel for the VCR on the TV. To watch TV programs selected on the TV, press TV/VTR to turn off the VTR indicator in the display window.

- If your TV is connected to both VHF/UHF OUT and LINE OUT on the VCR, set to "OFF".

When playing back a cassette, select the input for the VCR on the TV.
To watch TV programs selected on the TV, select the tuner input.

AUTO STEREO

If a stereo program's reception is poor, set to "OFF". The program is recorded in monaural but sound quality may improve. For details, see page 36.

AUDIO MIX

To listen to sound recorded on both the Hi-Fi video track and the normal audio track of the audio tape, set to "ON". For details, see page 33.

NORMAL AUDIO

When there is a SAP (Second Audio Program) broadcast, select "SAP" to record the SAP sound on the normal audio track. For details, see page 33.

LANC MODE

If you want to control another VCR with the control L connector, set to "M" (Master). If you want the VCR controlled by another VCR or editing controller, set to "S" (Slave). (For details, see page 58.)

LINE IN 1 VIDEO

When you connect the video output jack of the other VCR to the LINE IN 1 VIDEO input jack of this VCR, select "STD". When you connect the S VIDEO output connector of the other VCR to the LINE IN 1 S VIDEO input connector of this VCR, select "S".

LINE IN 3 VIDEO

When you connect the video output jack of the other VCR to the LINE IN 3 VIDEO input jack of this VCR, select "STD". When you connect the S VIDEO output connector of the other VCR to the LINE IN 3 S VIDEO input connector of this VCR, select "S".

AUTO DISPLAY

Normally select "ON". In this case, the on-screen display will appear on the TV screen for about five seconds each time the operation mode of the VCR is changed.
Select "OFF" when you want to play back on this VCR and record on the other VCR. This eliminates the on-screen display so that it will not appear on the TV screen.

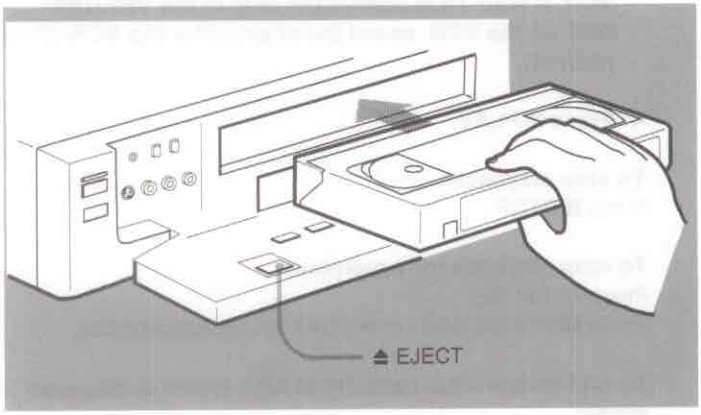
NOTE:
The VCR automatically exits from the main MENU and SET UP MENU if you don't proceed for more than one minute.

This section shows you how to play back a video cassette.

Inserting a Video Cassette

1 Insert a video cassette as shown below.

2 Gently press the center of the front side of the cassette until the mechanism draws it into the compartment.
When the cassette has been loaded, the cassette indicator ( ) lights up in the display window and the VCR turns on automatically.



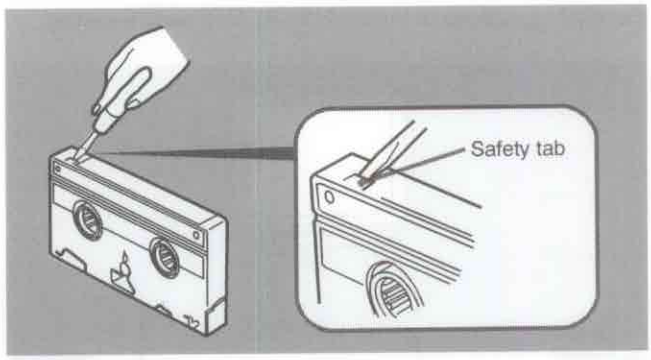
NOTE:
If you insert a cassette without a safety tab, playback starts automatically (auto playback function).

Ejecting the cassette

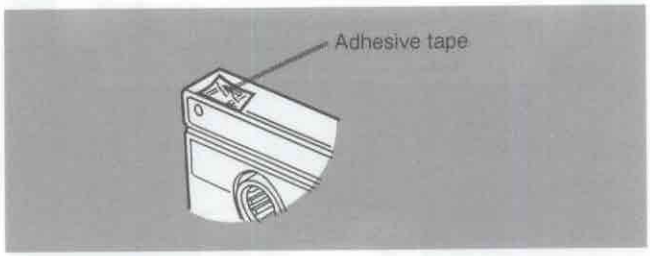
Press ⏏ EJECT on the VCR.
You can eject the cassette when the power is off.
When you press ⏏ EJECT, the power is turned on. After ejecting the cassette, the power automatically shuts off.

Protecting your cassettes against accidental erasure

Cassettes have a safety tab to protect against accidental recording. Break off the safety tab with a screwdriver or other tool. If the safety tab is removed, the cassette will be ejected when you try to record on it.



To record on a cassette with the safety tab broken off, simply cover the tab hole with adhesive tape.



Maximum recording time of a cassette

Recording in either the SP or EP mode is possible with this VCR. When recording, select the desired recording speed (SP or EP) using TAPE SPEED on the Remote Commander. During playback, the VCR automatically detects the recording format, and then plays back the cassette in the appropriate mode. A cassette recorded in the EP mode runs three times as slowly as a cassette recorded in the SP mode. Refer to the chart below for the recording/playback times available.

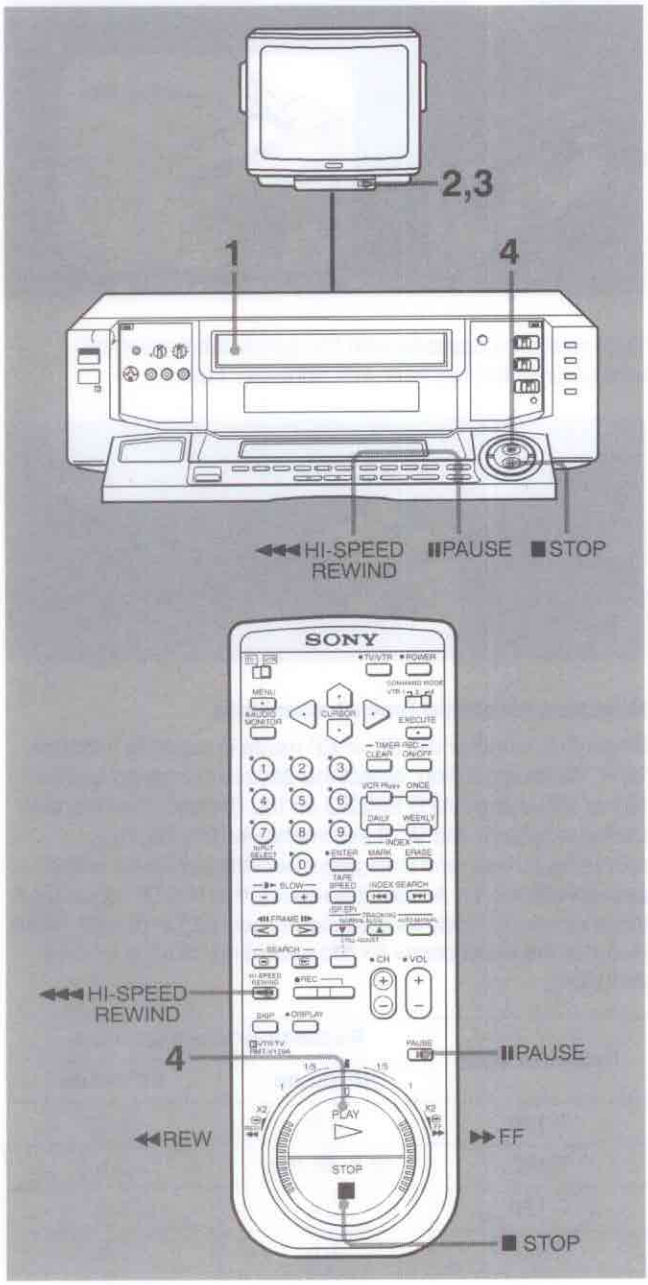
Cassette tape	Recording/Playback time	
	SP mode	EP mode
T-180	3 h	9 h
T-160	2 h 40 min	8 h
T-120	2 h	6 h
T-60	1 h	3 h
T-30	30 min	1 h 30 min

Cassettes recorded in LP mode

Playback of cassettes recorded in LP mode is also possible with this VCR. However, playback in modes other than normal forward speed is not guaranteed. This VCR is not designed to record in the LP mode.

Playback

The VCR automatically detects the type of video format in which the tape was recorded (S-VHS format or VHS format) and the recording tape speed mode in which the tape was recorded (SP mode, LP mode or EP mode), and plays back the tape accordingly. When a tape recorded in the S-VHS format is played back, the S-VHS indicator will appear in the display window of the VCR regardless of the S-VHS ON/OFF switch setting.



1 Insert a cassette.

2 Turn on the TV.

3 If your TV is connected to both VHF/UHF OUT and LINE OUT 1 or 2 on the VCR, select the input for the VCR. If your TV is connected only to the VHF/UHF OUT on the VCR, select the channel for the VCR (CH 3 or CH 4).

4 Press ▶ PLAY.

To stop playback:
Press ■ STOP.

To stop playback for a moment:
Press II PAUSE.
Press II PAUSE again or ▶ PLAY to resume playback.

To fast-forward the cassette at high speed during stop mode:
Turn the DUAL MODE SHUTTLE ring to the right (▶▶).

To rewind the cassette during stop mode:
Turn the DUAL MODE SHUTTLE ring to the left (◀◀).

To rewind the cassette at high speed
Press ◀◀◀ HI-SPEED REWIND.

To rewind the cassette to its beginning and to playback automatically (auto playback function):
You cannot use the Remote Commander for the auto playback function.
Press ▶ PLAY while depressing ◀◀◀ HI-SPEED REWIND or while fully turning the DUAL MODE SHUTTLE ring to the left (◀◀).

When the cassette reaches the end:
The cassette automatically rewinds to the beginning (auto rewind), and power remains on.

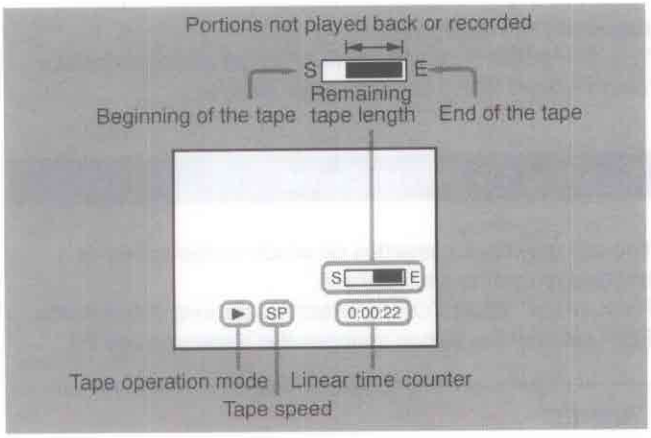
NOTES:

- When the TV is connected only to the VHF/UHF OUT on the VCR, you cannot hear the program in stereo.
- In order to hear stereo playback, it is necessary to connect the L/R audio out connections of the VCR to a stereo monitor TV, or stereo audio system.

The On-Screen Display

You can use the on-screen display function in two modes, AUTO DISPLAY ON mode and AUTO DISPLAY OFF mode. You can select the desired mode by using the SET UP MENU screen. (For details, see pages 27 and 28.)

Activated on-screen display function mode	**Each time DISPLAY on the Remote Commander is pressed.**	
AUTO DISPLAY ON mode	The corresponding VCR operation mode display will appear for about five seconds on the TV screen when the VCR enters the other operation mode.	In addition to the left the current date and time, remaining tape length, linear time counter will appear on the TV screen.
AUTO DISPLAY OFF mode	No display is shown on the TV screen.	Same as above.

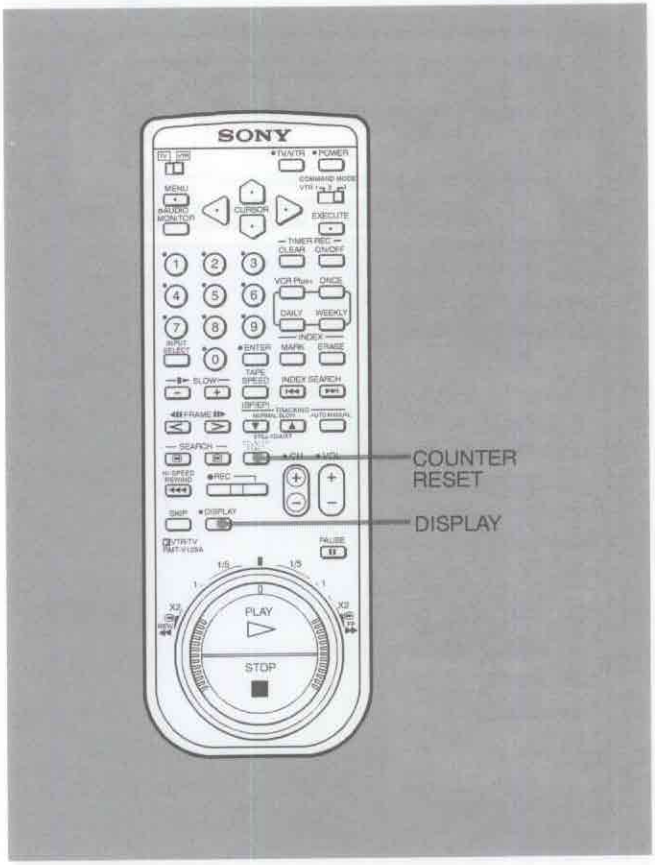


NOTES:

- The remaining tape length displayed is approximate. Therefore, use it only as an approximate reference.
- When you insert a cassette with a short tape length such as T-20, T-30 or a non-standard commercially available cassette, this indicator may not function correctly.
- The data screen display cannot be displayed on the screen during still mode, slow motion playback.

Indexing Tape Contents

When a cassette is inserted, the clock display will be automatically switched to the counter display and the counter reading "0H00M00S" will appear in the display window. If you want , however, to reset the counter to zero, press COUNTER RESET on the Remote Commander. By noting the setting, you can find that point later by referring to the counter. Use the label on the cassette to list the programs and their counter readings.

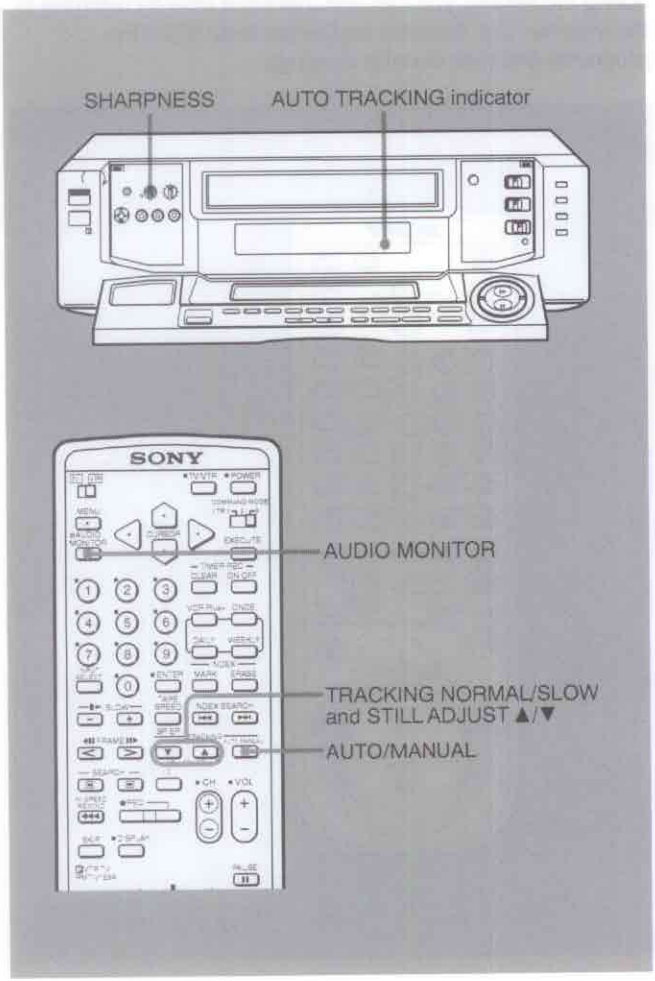


NOTES ON COUNTER READING:

- After a cassette is ejected, the counter display will be automatically switched to the clock display. When a cassette is reinserted the counter display will appear and show the counter reading "0H00M00S".
- The counter does not work properly on the portions on which no recording has been made.

Playing Back Externally-Recorded Tapes

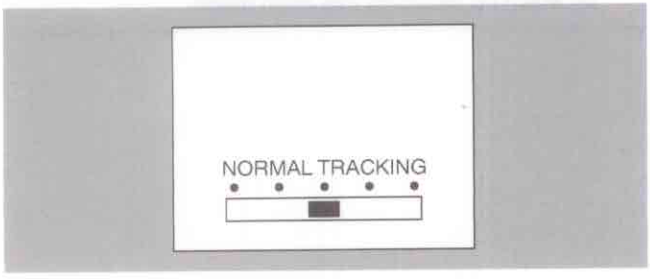
When playing back a cassette that was recorded on another VCR, the tracking condition is automatically adjusted and the picture sharpness is set to an optimum condition. You can also adjust the tracking condition manually according to the following instructions.



Manual tracking adjustment

When the playback picture has streaks or snow during normal playback, adjust the picture manually with TRACKING NORMAL/SLOW and STILL ADJUST ▼/▲.

Press either ▲ or ▼ for the best possible picture. The tracking meter will appear on the TV screen and the AUTO TRACKING indicator will turn off.



Automatic tracking adjustment

The tracking condition is automatically adjusted on this VCR. The AUTO TRACKING indicator flashes while the VCR is searching for the optimal tracking condition and lights when the optimum playback picture is obtained. The automatic tracking control is activated in the following conditions:

- When the cassette is inserted for the first time
- When the recording mode on the playback cassette is switched from SP to EP and back again
- When the picture is distorted by scratches on the tape
- When the AUTO TRACKING indicator is turned on by pressing TRACKING AUTO/MANUAL after the picture is adjusted manually

NOTES:

- Auto tracking adjustment is not possible for cassettes recorded in LP mode.
- When the recording condition of the cassette is poor, auto tracking adjustment may be impossible and the tracking indicator may not appear on the TV screen.
- During auto tracking adjustment, streaks or noise may occur.

Adjusting the sharpness

Turn SHARPNESS toward SHARP to get a sharper picture. Turn it toward SOFT to get a softer picture.

Selecting the Monitor Sound

You can play back cassettes on which stereo sound or bilingual programs are recorded.
Press AUDIO MONITOR to select the desired sound mode. Each press of the button changes the display on the TV.

NOTE:

When you play back a cassette recorded in monaural, the sound is heard in monaural regardless of the setting of the AUDIO MONITOR.

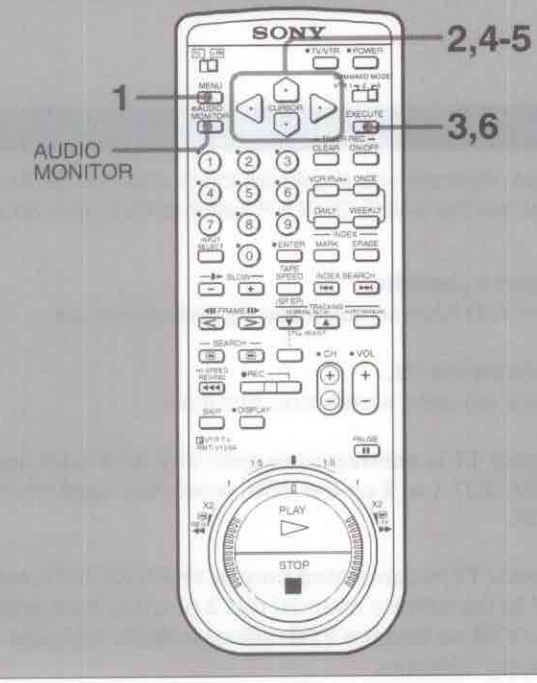
Sound Mode

Display	On-screen Display	Sound heard	
		Stereo tape	Bilingual tape
STEREO	STEREO	Stereo	Left and right channels
MAIN/L	Lch	Left channel	Left channel
SUB/R	Rch	Right channel	Right channel
None	None	Monaural on normal audio track	Sound on normal audio track (SAP)

Listening to Mixed Hi-Fi and Normal Track Sound

You can hear sound recorded on the hi-fi video track and the normal audio track simultaneously. This allows you to listen to an audio-inserted cassette.

Use ▲ and ▼ to move the cursor.
Use ◄ and ► to select items.



1 Press MENU.

The main MENU appears.

```
MENU
►TIMER SET/CHECK
 SET UP MENU
 TUNER PRESET
 SET VCR Plus+ CHANNELS
 CABLE BOX CONTROL
 CLOCK SET
```

2 Press ▲ or ▼ to move the cursor (►) to SET UP MENU.

```
MENU
 TIMER SET/CHECK
►SET UP MENU
 TUNER PRESET
 SET VCR Plus+ CHANNELS
 CABLE BOX CONTROL
 CLOCK SET
```

3 Press EXECUTE.

The SET UP MENU appears.

```
SET UP MENU
►AUTO ANT SEL   •ON  OFF
 AUTO STEREO    •ON  OFF
 AUDIO MIX      ON  •OFF
 NORMAL AUDIO   •MAIN SAP
 LANC MODE      M   •S
 LINE IN 1 VIDEO •STD S
 LINE IN 3 VIDEO •STD S
 AUTO DISPLAY   •ON  OFF
```

4 Press ▲ or ▼ to move the cursor to AUDIO MIX.

```
SET UP MENU
 AUTO ANT SEL   •ON  OFF
 AUTO STEREO    •ON  OFF
►AUDIO MIX      ON  •OFF
 NORMAL AUDIO   •MAIN SAP
 LANC MODE      M   •S
 LINE IN 1 VIDEO •STD S
 LINE IN 3 VIDEO •STD S
 AUTO DISPLAY   •ON  OFF
```

5 Press ◄ or ► to move the dot (•) to "ON".

```
SET UP MENU
 AUTO ANT SEL   •ON  OFF
 AUTO STEREO    •ON  OFF
►AUDIO MIX      •ON  OFF
 NORMAL AUDIO   •MAIN SAP
 LANC MODE      M   •S
 LINE IN 1 VIDEO •STD S
 LINE IN 3 VIDEO •STD S
 AUTO DISPLAY   •ON  OFF
```

6 Press EXECUTE to return to the original screen.

NOTES:

- When you set AUDIO MIX to "ON", the AUDIO MONITOR button does not function.
- Reset to "OFF" after listening to the sound in audio mix mode.

Recording TV Programs

Before you begin, check the following points:

- Make sure that the connections have been made correctly (see pages 6 to 15).
- Check the input mode indicator in the display window of the VCR.

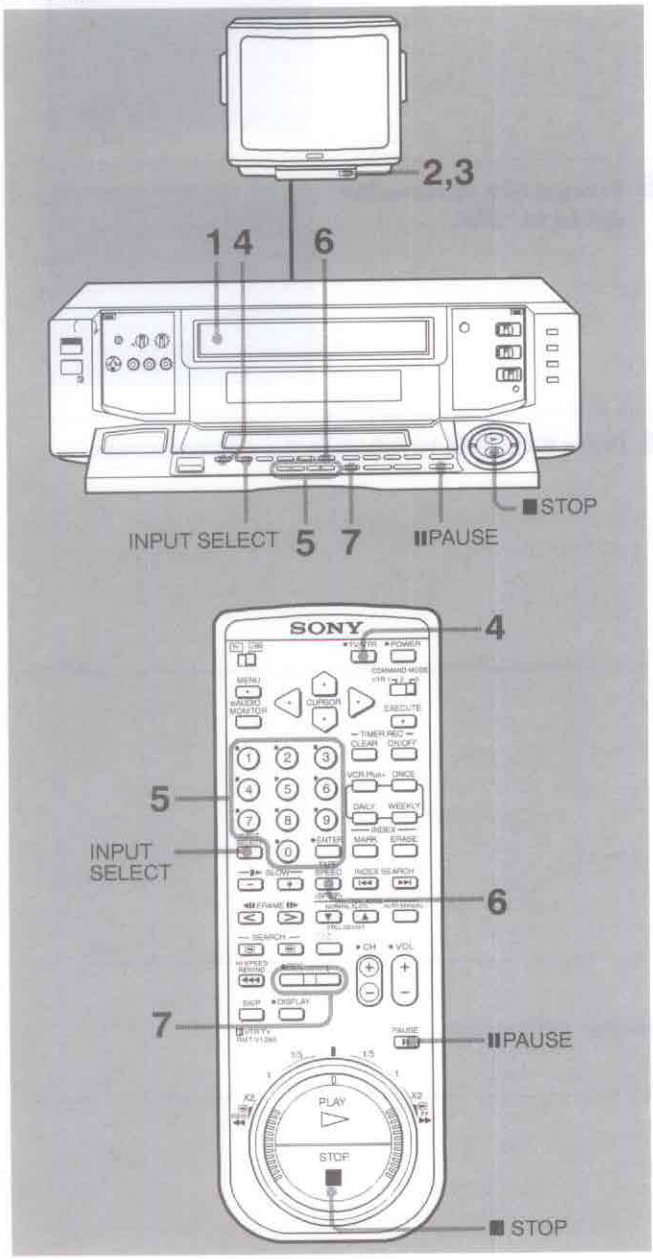
  Press INPUT SELECT so that the LINE indicator disappears and the TUNER indicator appears in the display window.
  Check that the REC LEVEL control is set to the 5 position.

CAUTION:

Television programs, films, video cassettes and other materials may be copyrighted. Unauthorized recording of such materials may be contrary to the provisions of the copyright laws. Also, use of this recorder with cable television transmission may require authorization for the cable television and/or program owner.

Recording TV Programs

You can record in the S-VHS format or the VHS format using an S-VHS tape. Normally you should set the S-VHS ON/OFF switch to ON. However, if you intend to play back on another VHS format recorder, set the S-VHS ON/OFF switch to OFF. (For details, see page 4.)



1 Insert a cassette.
The VCR turns on automatically (auto power on).

2 Turn on the TV.
If you are using a cable box, turn it on.

3 If your TV is connected to both VHF/UHF OUT and LINE OUT 1 or 2 on the VCR, select the input for the VCR.

4 If your TV is connected only to VHF/UHF OUT, set the TV to the correct channel (CH 3 or CH4), then press TV/VTR so that the VTR indicator lights up in the display window.
Skip this step if your VCR is connected to both the VHF/UHF OUT and LINE OUT 1 or 2.

5 Select the channel to be recorded with CHANNEL +/− or the channel number buttons and press ENTER.

6 Select SP or EP with TAPE SPEED (SP/EP).
To select the best recording tape speed, see "Maximum Recording Time of a Cassette" on page 29.

7 Press the two ● REC buttons on the Remote Commander at the same time, or the ● REC button on the VCR.
The REC indicator lights up on the VCR.

To stop recording:

Press ■ STOP.

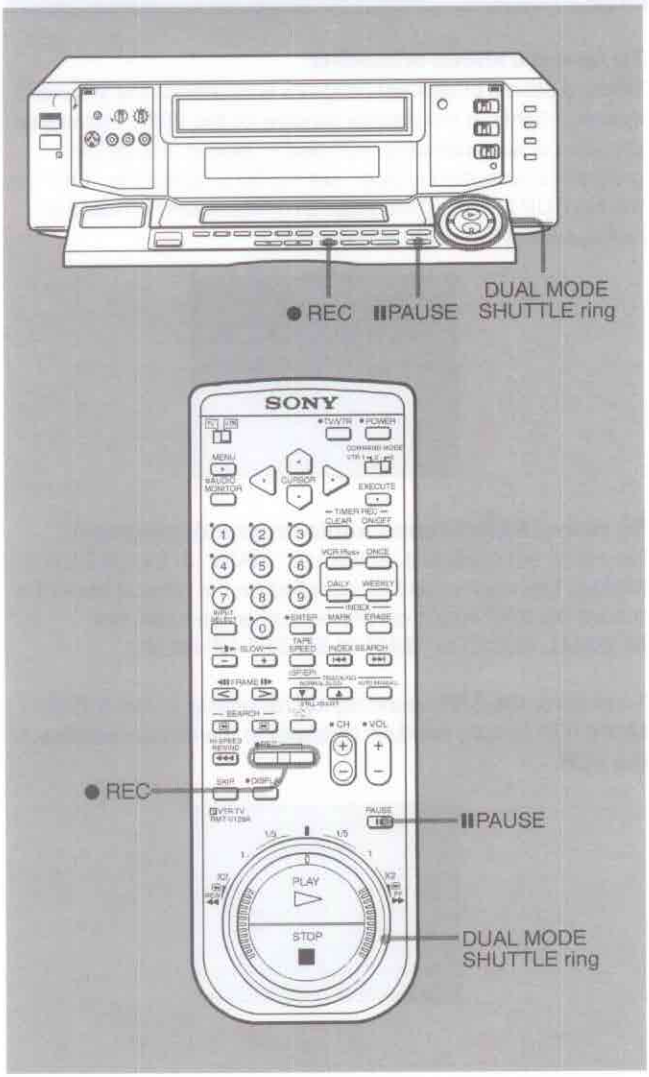
To pause the cassette:

Press II PAUSE. To resume recording, press II PAUSE. When the recording pause mode lasts for approximately 5 minutes, the VCR enters the stop mode.

When the cassette reaches its end:

The cassette rewinds to the beginning and the power remains on.

Pausing



Technique 1

You can stop recording an unwanted scene and resume recording smoothly.

1 **Press II PAUSE when an unwanted scene appears.**
Recording will stop and the VCR enters the recording pause mode.

2 **Press II PAUSE at the desired point to release the pause mode.**
Recording resumes from the point set in step 1.

Technique 2

When an unwanted scene has already started recording, you can return the cassette to the desired point, have the VCR standby in the recording pause mode, and resume recording at the desired scene. **This feature is only available on the VCR, not the Remote Commander.**

1 **Press II PAUSE to set the VCR to the recording pause mode.**

2 **Turn the DUAL MODE SHUTTLE ring to the left to search for the point from which you wish to continue recording.**

3 **Release the DUAL MODE SHUTTLE ring at the desired point.**
After an instant in still mode, the VCR automatically enters the recording pause mode.

4 **Press II PAUSE.**
Recording resumes.

Recording with the TV Off

Turn off the power of the TV or color monitor.
There will be no interference with the recording.

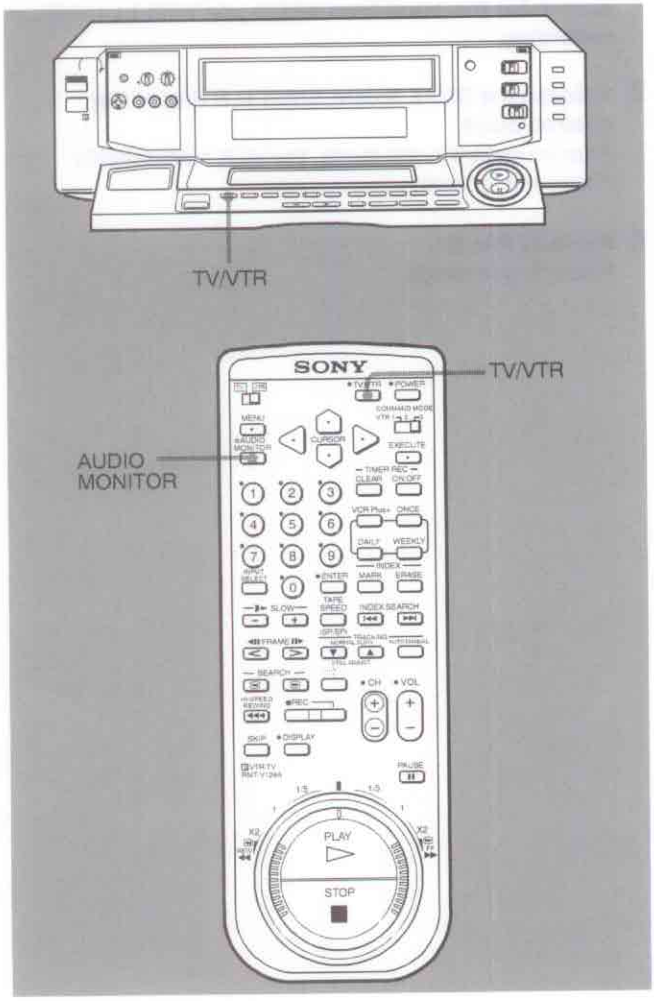
When using a cable box, make sure to leave the power for it set to on.

Watching One TV Program While Recording Another

1 **Press TV/VTR so that the VTR indicator goes off.**
Skip this step if you have connected the TV and the VCR using the LINE OUT.

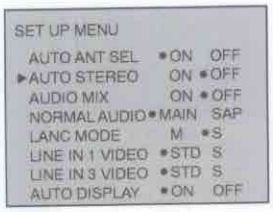
2 **Select the channel you want to watch on the TV.**

VTR Indicator	Picture on the TV Screen
Lit	Channel selected by the VCR or the playback picture of the VCR
Unlit	Channel selected by the TV



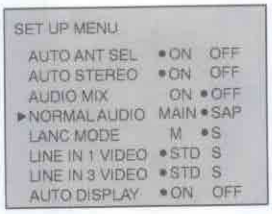
Recording Multi-channel TV Sound (MTS) Broadcasts

To record a stereo broadcast:
When a stereo broadcast program is received, the STEREO indicator lights in the display window of the VCR. The stereo program is automatically recorded in stereo. If a stereo program's reception is poor, set AUTO STEREO to "OFF" in the SET UP MENU. (See page 27.) The sound is heard in monaural but the noise is reduced.


SET UP MENU
AUTO ANT SEL •ON OFF
▶AUTO STEREO ON •OFF
AUDIO MIX ON •OFF
NORMAL AUDIO •MAIN SAP
LANC MODE M •S
LINE IN 1 VIDEO •STD S
LINE IN 3 VIDEO •STD S
AUTO DISPLAY •ON OFF

To record SAP (Second Audio Program) broadcast:
Normally, set NORMAL AUDIO to "MAIN" in the SET UP MENU. The main sound is recorded on the normal track. To record the SAP sound on the normal audio track, set NORMAL AUDIO to "SAP" in the SET UP MENU.

To monitor the SAP sound during recording, press AUDIO MONITOR to light the SAP indicator in the display window of the VCR.


SET UP MENU
AUTO ANT SEL •ON OFF
AUTO STEREO •ON OFF
AUDIO MIX ON •OFF
▶NORMAL AUDIO MAIN •SAP
LANC MODE M •S
LINE IN 1 VIDEO •STD S
LINE IN 3 VIDEO •STD S
AUTO DISPLAY •ON OFF

NOTES:

- When not recording a SAP broadcast, select "MAIN". If you select "SAP", no sound is recorded on the normal audio track.
- Even if you work on the DUAL MODE SHUTTLE ring during recording, the DUAL MODE SHUTTLE ring is inoperative. To operate it, put the VCR into the recording pause mode with ❚❚ PAUSE or the stop mode with ■ STOP.

Timer Recording

The timer recording function lets you preset your VCR to record up to eight programs within a one-month period. You'll do this procedure from the TIMER SET/CHECK display on your TV.

As a First Step

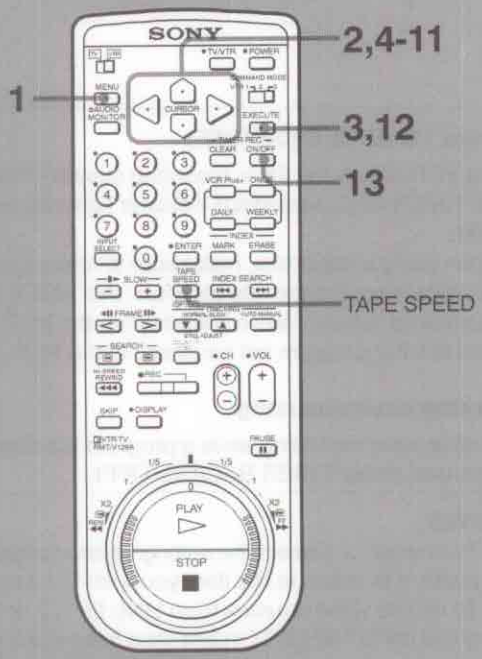
Before setting the timer, make sure that:

- The time and date clock is set correctly.
  If you intend to put the VCR into timer-activated recording mode without having preset the time and date, the VCR will enter clock setting mode automatically.
  (See "Setting the Time and Date" on page 19).
- The cassette is long enough to record all the programs.
- The safety tab on the cassette is intact. If you insert a cassette with no safety tab and press TIMER REC (ON/OFF), the cassette automatically ejects from the VCR.
- The VCR and TV are both turned on. (TV can be turned off after you've set up the VCR.)
- When you use a cable box, use Hook up 2 and set the CABLE BOX CONTROL (See "Setting the CABLE BOX CONTROL" on page 25.) Turn the cable box on.

Setting The Timer

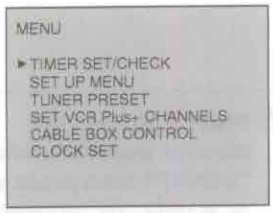
EXAMPLE: Here's how to record a program broadcast on channel 26 from 9:00 pm to 10:55 pm on Saturday, July 10, 1993 in EP mode:

Use ▲ and ▼ to move the cursor.
Use ◄ and ► to select items.

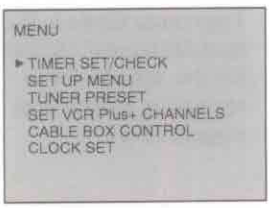


1 Press MENU.

The main MENU appears.

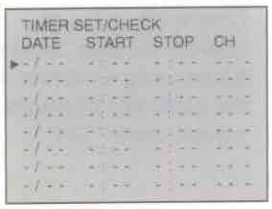


2 Press ▲ or ▼ to move the cursor (►) to TIMER SET/CHECK.



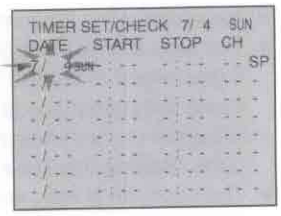
3 Press EXECUTE.

The TIMER SET/CHECK display appears on the screen. A short beep alerts you if the clock is not set properly. To reset the clock, refer to "Setting the Time and Date" (page 19).



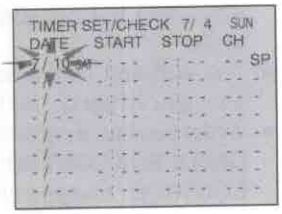
4 Press ▶.

Make sure that today's date is flashing. If it isn't, reset the clock to the correct time. See "Setting the Time and Date" (page 19).

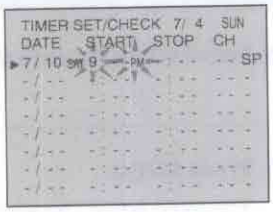


5 Press ▲ or ▼ to set the month and date to "7/10 SAT".

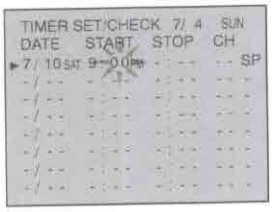
The day of the week is automatically set.



6 Press ▶ to flash the hours position under "START", then press ▲ or ▼ until "9:-- PM" appears.



7 Press ▶ to flash the minutes position under "START", then press ▲ or ▼ until "00" appears.



8 Press ▶.

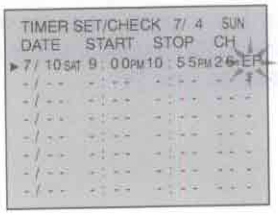
The cursor blinks in the time field under "STOP". Set the time to finish recording, referring to steps 6 and 7.

9 Press ▶ to flash the "CH" field, then press ▲ or ▼ until "26" appears.

Only the channels preset in the VCR will appear. You can also use the CHANNEL +/− or channel number buttons. When using a cable box, the cable box channels appear under "CH".

10 Press ▶ to flash the recording speed position, then ▲ or ▼ or TAPE SPEED until "EP" appears.

To change or correct a setting before entering it, press ◀ to return to the item you wish to change.



11 Press ▶ to store the setting.

When all of the settings stop flashing and a ▶ appears in the leftmost column, you've completed the setting. To preset another program, press ▲ or ▼ to move the cursor to the next line and repeat steps 4 to 11.

12 Press EXECUTE.

The message "Please push TIMER REC to set timer" appears on the TV screen.

13 Press TIMER REC (ON/OFF).

The VCR enters the timer recording standby mode and the TIMER REC (recording) indicator lights up on the VCR.
When using a cable box, make sure to leave it on. If a cassette is not loaded into the VCR, the TIMER REC (recording) indicator will not light up on the VCR window, but the timer program will be stored in the VCR.

To stop timer recording:

To stop timer recording while a program is being recorded, press TIMER REC(ON/OFF).

NOTES:

- To change or correct the setting before completing it, press ◀ to return to the item you wish to change.
- To record video sources from LINE IN 1, 2 or 3 jacks, press INPUT SELECT in any step from 4 to 11 to move the screen cursor to LINE 1, 2 or 3 in the "CH" position. This cursor returns to channel number on the fourth press.
- When CABLE BOX CONTROL is set to "ON", timer recording cannot be done through LINE IN.
- If you don't proceed for more than one minute, the VCR automatically exits from TIMER SET/CHECK menu.

Daily/Weekly Recording

You can preset your VCR for daily or weekly recording. Daily recording records the same program every day of the week while weekly recording records the same program on the same day, every week. Follow steps 1 to 4 in "Setting the Timer" (pages 37 and 38).
Each time you press ▼, the indicator under the "DATE" column changes to one of these choices:

CURRENT — date ←
↓
SUN — SAT (Every day of the week)
↓
MON — SAT(Every day except Sunday)
↓
MON — FRI (Every day except Saturday and Sunday)
↓
EVERY SAT
.
.
.
EVERY TUE
↓
EVERY MON
↓
EVERY SUN
↓
Date one month after from the current date

Timer Recording Standby Mode

When you return the VCR to the timer recording standby mode, you can record any previously preset programs. The VCR turns on automatically to record the first preset program. When it finishes recording, the power automatically shuts off.
To stop timer recording, press TIMER REC (ON/OFF).

Buttons Operable During Timer Recording

TIMER REC (ON/OFF)	To stop timer recording. (See page 38.)
COUNTER RESET	(See "Indexing Tape Contents," page 31.)
TV/VTR	(See "Watching One TV Program While Recording Another," page 36.)
DISPLAY	(See "The On-Screen Display," page 31.)
MENU	For checking the programs only. (See "Checking the Timer Settings," page 41.)

NOTE:

If a power interruption occurs during timer recording, recording will stop and your VCR will turn off. If power is restored within three hours and it's before the recording end time, recording will start again from that point. If the interruption lasts for more than three hours, any presettings will be erased and you'll need to reset the time and date for your programs. Note that the tape counter will return to "0H00M00S".

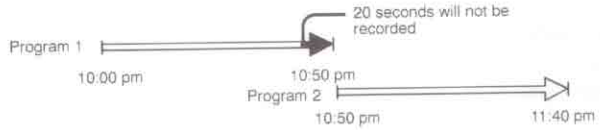
Overlapping Timer Recordings

Case 1
If you preset two programs to start recording at the same time...

The program listed first on the TIMER SET/CHECK display has priority over the other programs. The timer settings for lower priority programs will be deleted from the TIMER SET/CHECK display when recording begins for the first program.

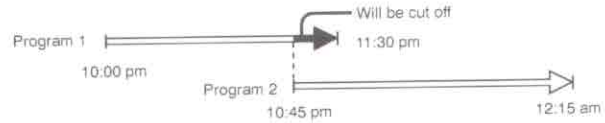
Case 2
If you preset program 2 to start recording at the same time you set program 1 to finish recording...

The last 20 seconds of program 1 will not be recorded.



Case 3
If you preset program 2 to start recording before program 1 has finished recording...

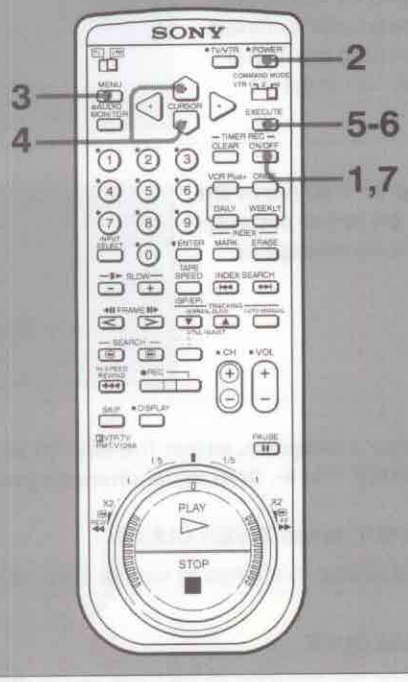
Program 2 will begin recording before program 1 has finished.



Checking the Timer Settings

Here's how to display your timer settings to confirm the programs you wish to record.

Use ▲ and ▼ to move the cursor.
Use ◄ and ► to select items.



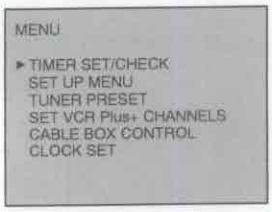
1 Press TIMER REC (ON/OFF).

The TIMER REC (recording) indicator turns off on the VCR.

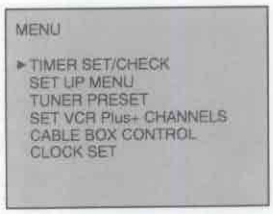
2 Press POWER.

3 Press MENU.

The main MENU appears.



4 Press ▲ or ▼ to move the cursor (►) to TIMER SET/CHECK.



5 Press EXECUTE.

The TIMER SET/CHECK display appears.

TIMER SET/CHECK 7/ 4 SUN
DATE START STOP CH
►4/ 24 SAT 7 : 00AM 8 : 00AM 6 SP
5/ 13THU10 : 30PM 11 : 15PM 5 0 EP
MON - SAT 1 : 00PM 3 : 00AM LINE2 EP
EVERY SUN12 : 55PM 1 : 30PM 112 SP

6 Press EXECUTE to return to the original screen.

7 Press TIMER REC (ON/OFF).

The VCR returns to the timer recording standby mode. When using a cable box, make sure to leave it on.

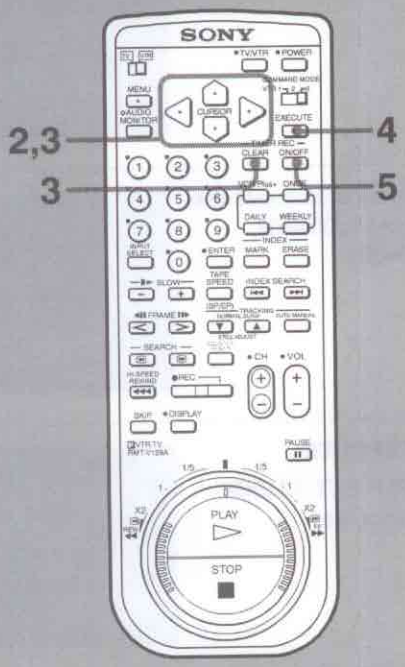
NOTES:

- If you set a program to record only one time, that setting is erased from the TIMER SET/CHECK display when the recording has finished.
- To check the timer settings during timer recording, follow steps 3 to 6 above.

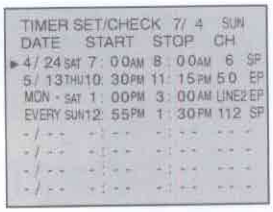
Changing or Cancelling the Timer Settings

Here's how to change or cancel any timer settings from the TIMER SET/CHECK display:

Use ▲ and ▼ to move the cursor.
Use ◄ and ► to select items.



1 Display the TIMER SET/CHECK menu on the TV screen by following the procedures outlined in "Checking the Timer Settings" on page 41.


TIMER SET/CHECK 7/ 4 SUN
DATE START STOP CH
▶ 4/ 24 SAT 7 : 00AM 8 : 00AM 6 SP
5/ 13THU10: 30PM 11: 15PM 50 EP
MON - SAT 1 : 00PM 3 : 00AM LINE2 EP
EVERY SUN12: 55PM 1 : 30PM 112 SP

2 Press ▲ or ▼ to move the cursor (▶) to the program you wish to change or cancel.

TIMER SET/CHECK 7/ 4 SUN
DATE START STOP CH
▶ 4/ 24 SAT 7 : 00AM 8 : 00AM 6 SP
5/ 13THU10: 30PM 11: 15PM 50 EP
MON - SAT 1 : 00PM 3 : 00AM LINE2 EP
EVERY SUN12: 55PM 1 : 30PM 112 SP

3 To change a program, select the item to be changed by pressing ◄ or ►, then make changes pressing ▲ or ▼.
To cancel it, press TIMER CLEAR.
Repeat this step to change or cancel other settings.

4 Press EXECUTE.
This stores the changes and returns you to the original screen.

5 Press TIMER REC (ON/OFF).
This returns you to the timer recording standby mode. When using a cable box, make sure to leave it on.

Using the VCR Before Timer Recording Starts

If you want to use your VCR while it's in the timer recording standby mode, you must first turn off the TIMER REC (recording) indicator on the VCR. Here's how:

1 Press TIMER REC (ON/OFF).

The TIMER REC (recording) indicator on the VCR turns off and the VCR leaves the timer recording standby mode.

2 Press POWER.

The VCR is ready to use.

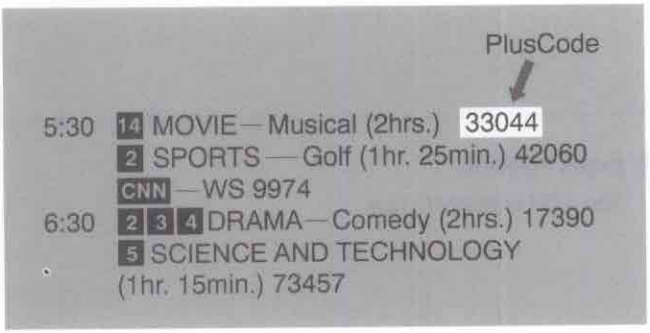
3 After using the VCR, press TIMER REC (ON/OFF).

The VCR returns to the timer recording standby mode and the TIMER REC (recording) indicator lights up. When using a cable box, make sure to leave it on.

Introducing VCR Plus+

VCR Plus+ is a feature used in Sony VCRs that simplifies the task of programming your VCR to make unattended recordings. Here's how it works:

Whenever you want to record a TV program, all you need to do is to look up the program's "PlusCode", a number assigned to each program that's published in the TV section of most newspapers, cable TV listings, and even *TV Guide* magazine.



Then, just enter the number of the program you want — using the Remote Commander — and the VCR is automatically programmed to record that show. It's that simple. With VCR Plus+, you no longer have to go through a lengthy and often repetitive procedure when you set start and stop times, channel numbers, and dates. All this information is automatically sent to your VCR when you enter the program's PlusCode!

Of course, there's some setup you'll need to do before you use VCR Plus+ for the first time. But after this initial setup, just think of how much easier it'll be to record your favorite TV programs, cable movies, and sporting events — all with the touch of a few buttons. VCR Plus+ makes programming your VCR easier than ever!

NOTE:
If PlusCodes aren't yet available in your area, they'll probably be introduced soon. Check with your local newspaper for details.

VCR Plus+ Setup Instructions

Setting up your VCR to use VCR Plus+ involves coordinating the TV channel number (the number you turn to on your TV or VCR to watch a program) with the guide channel (the number that's assigned to that channel in your program guide).

If you don't have cable TV (i.e., if your TV receives its signal from an antenna only), the TV channel number and the guide channel number will probably be the same, in which case you'll only have to check that the two numbers match. For numbers that don't match, you must first perform the procedures that follow to get these channel numbers synchronized with each other.

To get the guide channel numbers, find the Channel Line-up Chart in the program guide for your area that features VCR PlusCodes. It usually looks like the example to the right.

If you have cable TV, you should then get the TV channel numbers for each channel from your cable company. (You may already know them.) Then **for channel numbers that are different**, enter the program guide channels (from the Program Guide), on the left, and the actual TV channels (from your cable system), on the right, as shown on page 45.

Example of "Channel Line-up Chart"

CABLE TV	Guide channel number
A&E Arts & Entertainment Network	39
AMC American Movie Classics	35
BRV Bravo (program grid only)	54
CNN Cable News Network	42
CSP C-SPAN	28
DIS The Disney Channel	53
DSC The Discovery Channel	37
ESN ESPN	34
FAM The Family Channel	47
HBO Home Box Office	33
LIF Lifetime	46
MAX Cinemax	45
MSG Madison Square Gardens Network	19
MTV Music Television	48
NIK Nickelodeon	38
SC Sports Channel	59
SCA Sports Channel America	70
SHO Showtime	41
TBS TBS SuperStation	43
TMC The Movie Channel	58
TNN The Nashville Network	49
TNT Turner Network Television	52
USA USA Network	44

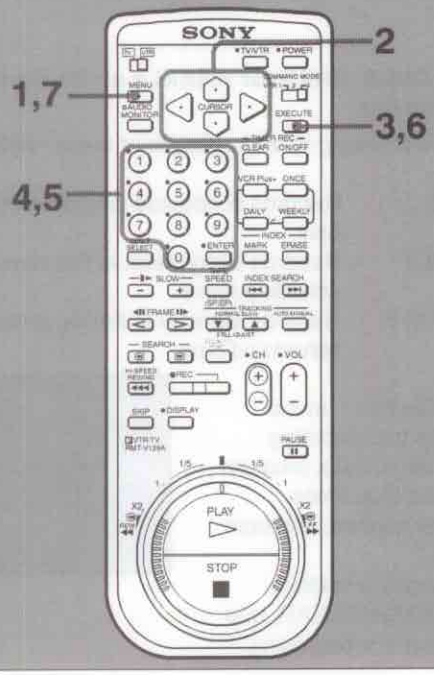
EXAMPLE

For each channel your VCR receives, use the Channel line-Up Chart to check that the channel numbers match. For example, if HBO is listed in the Channel Line-Up Chart on channel 33, and your VCR receives HBO on channel 15, you need to coordinate these numbers using the following procedures. For channels in which the numbers are the same (for example, if your VCR receives HBO on channel 33, and the guide channel number is 33), you can skip these procedures.

Example:

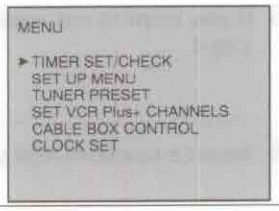
Guide Channel (from "Channel Line-Up Chart" in your program guide)	TV Channel (channel you actually use on your VCR)
33 (Home Box Office)	15

Use ▲ and ▼ to move the cursor.
Use ◄ and ► to select items.

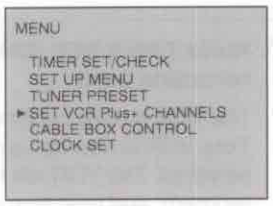


1 Press MENU.

The main MENU appears.

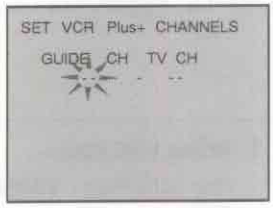


2 Press ▼ or ▲ to move the cursor (►) to SET VCR Plus+ CHANNELS.



3 Press EXECUTE.

The SET VCR Plus+ CHANNELS menu appears.
The "GUIDE CH" field blinks.

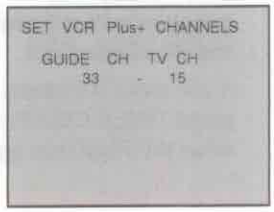


4 In the "GUIDE CH" field, enter 33 (the number assigned to this channel in the Channel Line-Up Chart) and press ENTER.

The "TV CH" field blinks.

5 In the "TV CH" field, enter 15 (the number to which you tune your VCR to watch this channel) and press ENTER.

To check your channel settings, press EXECUTE.



NOTE:
The TV Channel setting will be different whether you use cable TV or not. Please refer to "Preparation" on page 6.

6 For each channel in which the TV channel differs from the guide number, repeat steps 4 and 5, using the menus that are displayed.

7 When you've finished, press MENU to exit.

Recording Programs Using VCR Plus+

To use VCR Plus+ to record programs, all you need is the program's PlusCode, which you'll find in the program listings in your local newspaper, cable TV guide, or *TV Guide* magazine.
For example, to record the following program, just use the following procedures:

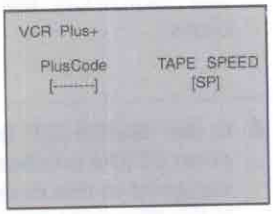
EXAMPLE: 13 **MOVIE**---Comedy (2hrs). 53292 ← PlusCode

NOTE:

- You can set the program without opening the VCR Plus+ menu. Refer to the display window on the VCR.
- When you use a cable box, use Hookup 2 and set the CABLE BOX CONTROL (See "Setting the CABLE BOX CONTROL" on page 25). Turn the cable box on.

1 Press VCR Plus+.

The VCR Plus+ TIMER SET menu appears.



2 Enter 53292 (the program's PlusCode) in the PlusCode field.

If you make a mistake, press TIMER CLEAR and enter the PlusCode again.

3 To select the cassette's recording speed (SP or EP), press TAPE SPEED.

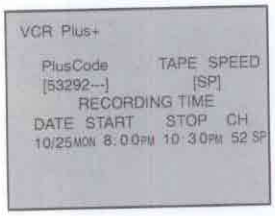
Unless you change the cassette speed, SP is used. See "Maximum recording time of a cassette" on page 29 for information about cassette speeds.

4 Press ONCE, DAILY, or WEEKLY on the Remote Commander.

See the following chart for details of these options.

ONCE:	Records scheduled programs one time only.
WEEKLY:	Records every week at the same scheduled time.
DAILY M-F:	Records Monday to Friday at the same scheduled time.

The VCR Plus+ menu displays the recording information: date, program start and stop times, channel number, and tape speed.
If you make a mistake, press TIMER CLEAR, and start from the beginning.



5 If you want to set another program, repeat steps 1 to 4.

6 Insert a cassette into your VCR.

7 Press TIMER REC (ON/OFF) to set the VCR's recording timer.

The VCR enters the timer recording standby mode. Your VCR is now set up to record the programs you've selected. The VCR will turn on automatically, record the program, and then turn off until the next programmed show is ready for broadcast.

For checking, changing, cancelling the settings, see pages 41 and 42.

NOTES:

You can't set the timer using PlusCodes in the following cases:

- When the VCR is turned off
- When the VCR is in timer-recording or quick-timer recording mode.
- When the VCR is in the timer-recording standby mode

The timer will not accept settings in the following cases:

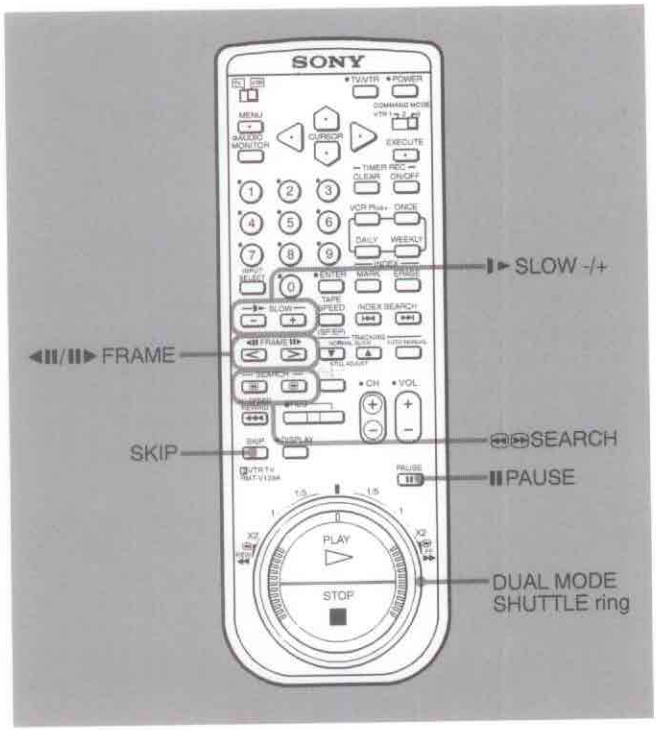
- When you select DAILY for a Saturday and Sunday program
- When you select WEEKLY or DAILY for a program more than the seven days ahead. (The WEEKLY and DAILY settings only work for the current week.)
- When you enter the PlusCode of a program that has already started or ended.

Variable Speed Playback

The following section explains the advanced playback functions you can use with your VCR.

Variable Speed Playback

Using the DUAL MODE SHUTTLE ring on your VCR or Remote Commander, you can play cassettes at a variety of forward and reverse speeds. You can also freeze a picture using the pause function.



Still Picture

When playing back a cassette, press II PAUSE to hold the picture in one place. To resume normal playback, press either ► PLAY or II PAUSE. If you leave your VCR in the pause mode, normal playback resumes after approximately 5 minutes.

Picture Search

By turning the DUAL MODE SHUTTLE ring either clockwise for forward viewing or counterclockwise for viewing in reverse, you can control the cassette playback speed.

- **Picture Search During Playback or Pause Modes**

While playing or pausing a cassette, turn the DUAL MODE SHUTTLE ring clockwise (forward direction) or counterclockwise (reverse direction) until the ▮ mark on the ring coincides with ◄◄ or ►►.
A high-speed picture without sound is displayed on the screen until you release the ring.

When you release the DUAL MODE SHUTTLE ring, it returns to its original position.
If you release the ring while in the pause mode, the picture returns to pause. If you release it during playback, the picture returns to playback.

> **NOTE**
> If you quick search a cassette recorded in the LP cassette speed, your picture may change to black and white, depending on the TV you're using.

- **Picture Search While Fast-Forwarding or Rewinding a Cassette**

When fast-forwarding or rewinding a cassette, you can turn and hold the DUAL MODE SHUTTLE ring to preview a high-speed picture (clockwise for forward viewing or counterclockwise for reverse viewing).

When you release the ring, it returns to its original position and the VCR continues fast-forwarding or rewinding.

Locked Picture Search

This feature lets you lock in and view a high-speed picture while playing or pausing a cassette. In the play or pause mode, press ◀◀ SEARCH (reverse) or ▶▶ SEARCH (forward) on the Remote Commander.
To resume normal playback, press ▶ PLAY.

Skip Playback

While playing a cassette, press SKIP on the Remote Commander.
This feature lets you view your cassette at high speed for about 30 seconds of tape before resuming normal playback. If you press SKIP two times or more, the VCR skips one minute of a scene.

Slow Motion Playback

During playback or playback pause mode, press I▶ SLOW + or − on the Remote Commander. Change the slow motion speed with the + or − buttons.
Press + to increase the playback speed, and − to decrease the playback speed.
If you leave your VCR in slow motion playback for more than 5 minutes, normal playback resumes.

Frame-by-Frame Picture

During the playback pause mode, press FRAME II▶ > to advance the picture one frame or ◀II < FRAME to reverse the picture one frame.
Each time you press the button, the picture moves one frame. To resume normal playback, press ▶ PLAY.
FRAME II▶ > and ◀II < FRAME are also used to change the tape transporting direction during normal playback, double-speed playback and slow motion playback.

Picture Adjustment During Variable Speed Playback

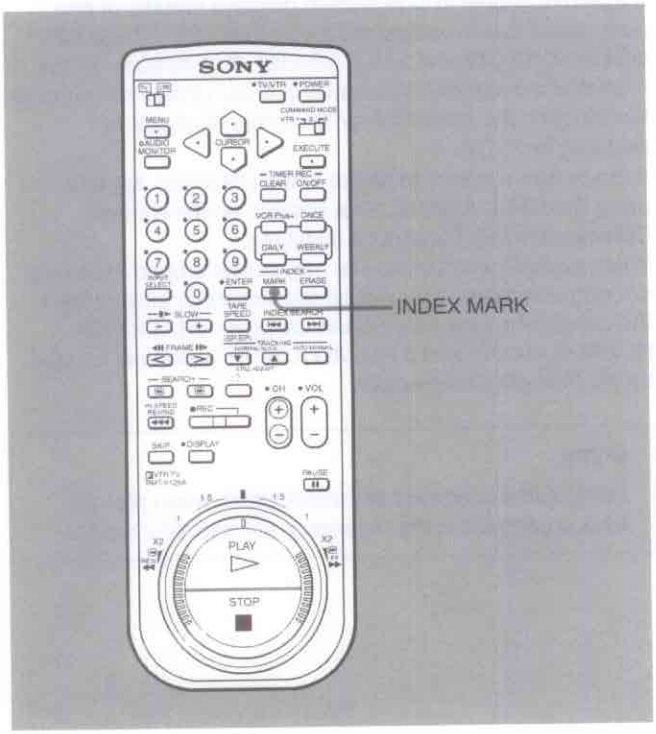
If a picture played in slow motion displays streaks or has poor sound quality, adjust the picture with the TRACKING NORMAL/SLOW and STILL ADJUST ▼/▲ buttons on the Remote Commander. You can adjust the picture more easily by changing the speed closer to normal playback by pressing I▶ SLOW +.
If the picture appears to shake in the still mode, adjust it using the STILL ADJUST ▼/▲ buttons on the Remote Commander until the picture stabilizes.
When pausing a cassette, you may notice a band at the top or bottom of the screen. Adjust the picture by playing back the cassette in slow motion and using the TRACKING NORMAL/SLOW and STILL ADJUST ▼/▲ buttons located on the Remote Commander.

NOTE:
Some snow or streaks are unavoidable when playing back a cassette in the reverse or reverse slow modes.

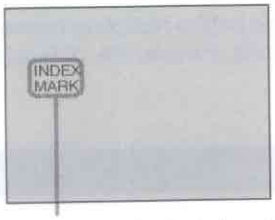
Index Function

You can find specific locations on a cassette using your VCR's index function.

Marking Index Signals



The VCR automatically inserts index signals each time you use the recording, timer recording or quick-timer recording functions (index mark). When an index mark is made, INDEX MARK appears on the TV screen. The index works as a divider between scenes, and is not numbers. So, when you specify the index mark later, you have to specify the relative position from the current position (the first index, the second index... from the current position). When going from the recording pause mode to the recording mode, an index is not inserted.



Appears while the index signal is being registered.

Automatic Index Mark

An index signal automatically marks the beginning of a program when you start recording it.

Manual Index Mark

When recording or playing a cassette, you can manually mark an index signal by pressing INDEX MARK on the Remote Commander.

NOTES:

- When marking index signals, leave an interval of at least 3 minutes between them so that the VCR can detect the signals correctly.
- When you mark an index signal during playback, the recorded sound, though not erased, is inaudible.
- You cannot mark an index signal in the following cases:
  - On a cassette without a safety tab.
  - On an unrecorded portion of a cassette.
  - Immediately before a point on the cassette where the cassette speed (EP or SP) changes.
  - When playing a cassette recorded in LP mode.

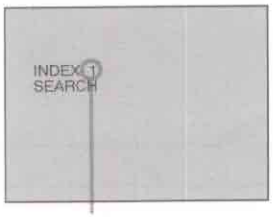
Locating an Index – Index Search

Locate an index by indicating how many index signals ahead or behind that program is from the cassette's current position. Here's how:

1 Insert an indexed cassette into your VCR.

2 Press INDEX SEARCH I◀◀ (reverse direction) or ▶▶I (forward direction) the necessary number of times to reach the desired index mark.

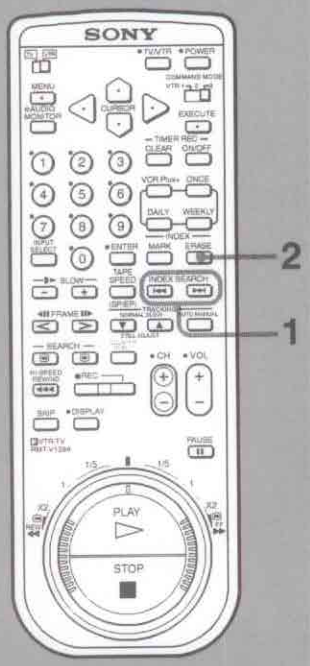
The VCR will rewind or fast-forward automatically and playback will start when the index number indicated on the TV screen reaches "0".
Up to 19 index signals from the present position on the tap can be located.



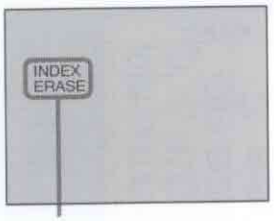
Indicates how many times you have pressed the button. If you search for programs ahead of the current program the index number is shown with - (minus).

Erasing Index Signals

To remove any unwanted index signals, follow these steps:



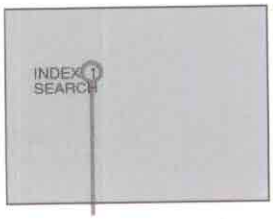
2 Press INDEX ERASE when the program of which you want to erase the index comes on the TV screen.



Appears while the index signal is being erased.

1 Press INDEX SEARCH I◄◄ (reverse direction) or ►►I (forward direction).

The VCR will rewind or fast-forward automatically and playback will start when the index number indicated on the TV screen reaches "0".



Indicates how many times you have pressed the button. If you search for programs ahead of the current program the index number is shown with - (minus).

To stop erasing index signals

Press ► PLAY or ■ STOP.

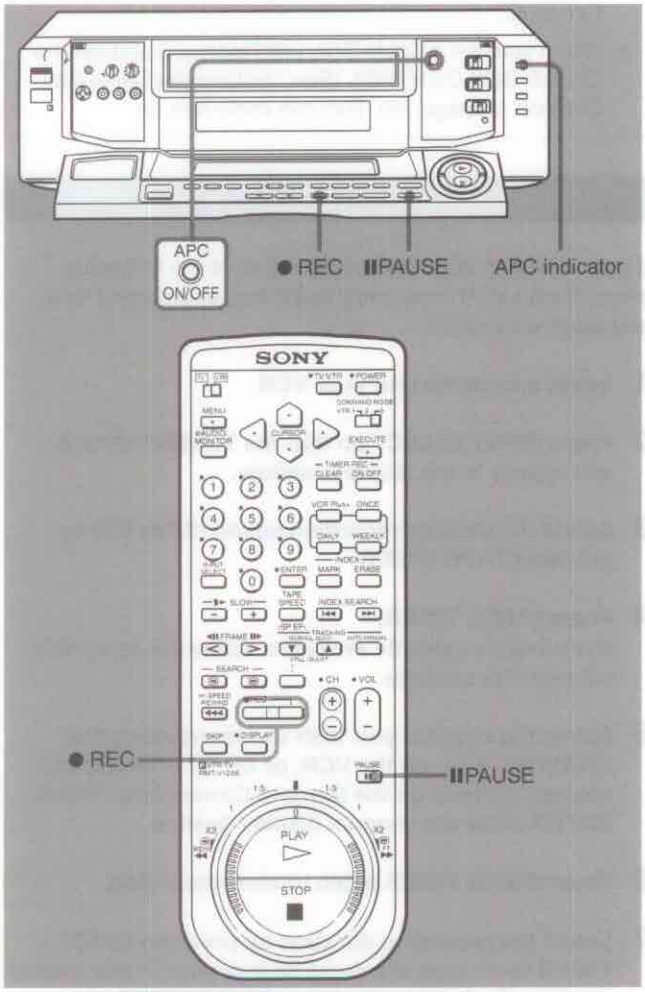
NOTES:

- While the index signal is being erased, the sound is inaudible.
- Index signals marked just before or after a change to the SP or EP recording mode cannot be erased.
- Index signals marked on a cassette recorded in LP mode cannot be erased.
- Index signals marked on the beginning of the tape cannot be erased.

APC (Adaptive Picture Control)

This function automatically improves recording and playback quality by adjusting the VCR for the condition of the video heads and video tape. To maintain better picture quality, we recommend that you leave the function on. (The APC indicator remains lit.)

Using the APC Function when Recording



Before you start recording, make sure the APC indicator is lit. If it is not, press the APC button inside the drop-down panel so that the APC indicator lights up.
The light flashes rapidly while the tape is being measured. The complete measurement is retained until the cassette is ejected. If you use that same tape again without ejecting it, the tape is not measured again.

When you are in the recording pause mode and the APC indicator flashes slowly

The APC function does not operate if you press ❚❚ PAUSE to release the pause mode.
To use the APC function when the indicator flashes slowly, press ● REC. After measurement is completed, the VCR returns to the recording pause mode. Press ❚❚ PAUSE to start recording.

When you are using timer recording

When you want to use the APC function during timer recording, press the APC button on so that the APC indicator lights up, then press the TIMER REC button.

Using the APC Function when Playing Back a Tape

When the APC indicator is on, the APC function automatically works on all types of tapes, including rental tapes. You can play back a tape using the APC function even if the tape was not recorded with it.

NOTES:

- Tapes recorded using the APC function are played back normally on VCRs that do not have the APC function.
- If the EDIT button inside the drop-down panel is set to "ON" during playback, the APC function does not operate.
- When doing audio/video insert editing, turn off the APC function as the timing of the insert may be incorrect when the function is on.

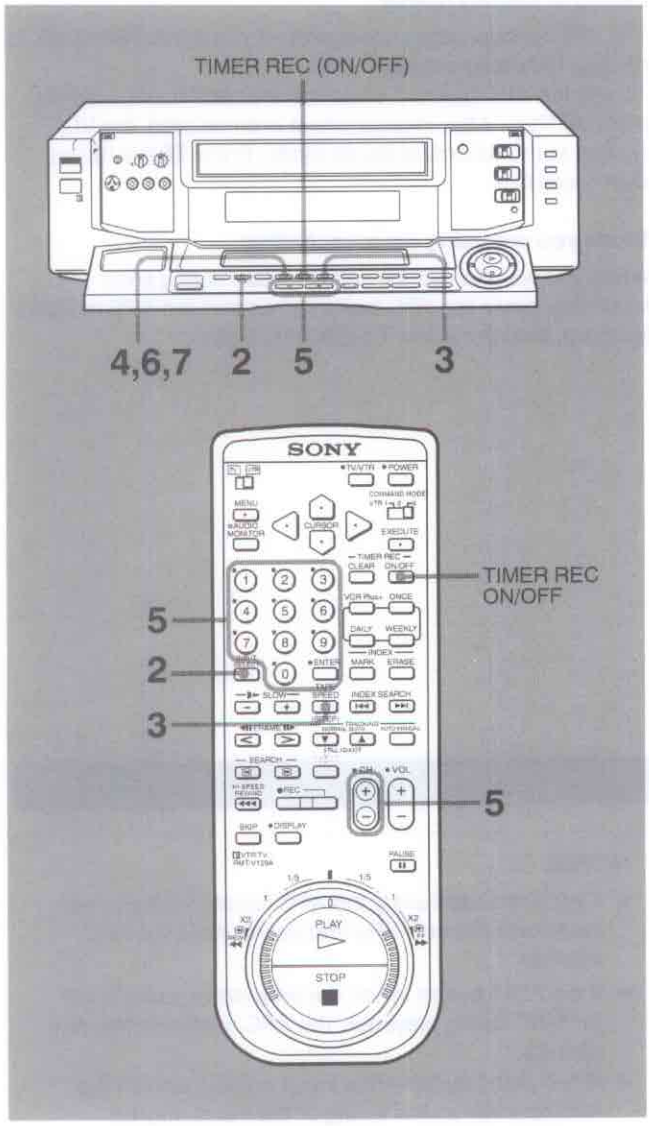
Quick-Timer Recording

This function provides you a shortcut to recording programs without going through the entire timer setting procedure. You can preset the timer up to 9 hours in units of 30 minutes.

NOTE:

- Before you begin, make sure the clock has been set, then ensure that the timer recording function is turned off by checking the TIMER REC (recording) indicator. If the indicator is lit, press TIMER REC ON/OFF to turn it off.
- When you use a Cable Box, use Hookup 2 and set the CABLE BOX CONTROL (See "Setting the Cable Box Control" on page 25). Turn the cable box on.

Quick-Timer Recording



If your VCR is in stop mode, perform all of the following steps. If your VCR is currently recording, skip steps 1 to 6, and begin with step 7.

1 **Insert a cassette into your VCR.**

2 **Press INPUT SELECT so that the TUNER indicator will appear in the display window.**

3 **Select the desired recording speed (SP or EP) by pressing TAPE SPEED.**

4 **Press QUICK TIMER.**
If you insert a cassette without its safety tab, your VCR will eject the cassette.

5 **Select the channel you wish to record using the CHANNEL +/– on the VCR, or CH +/– or channel number buttons on the Remote Commander. Press ENTER while the channel display flashes.**

6 **Press QUICK TIMER again to start recording.**

7 **Select the recording duration by pressing QUICK TIMER to change the duration indicator in the display window. Each time you press QUICK TIMER, the recording duration increases by 30 minutes.**
Once recording has finished, your VCR will turn off automatically.

0:00 → 0:30 →1:00 · · · · · · · · · · · · · · 9:00

To stop quick-timer recording

To stop quick-timer recording while a program is being recorded, press TIMER REC ON/OFF.

NOTES:

- If your cassette ends during quick-timer recording, recording stops and the VCR turns off. The cassette will not rewind automatically.
- If a power interruption occurs during quick-timer recording, recording will stop and your VCR will turn off. If the interruption lasts less than three hours and the power is restored before the recording end time, recording will start again from that point.

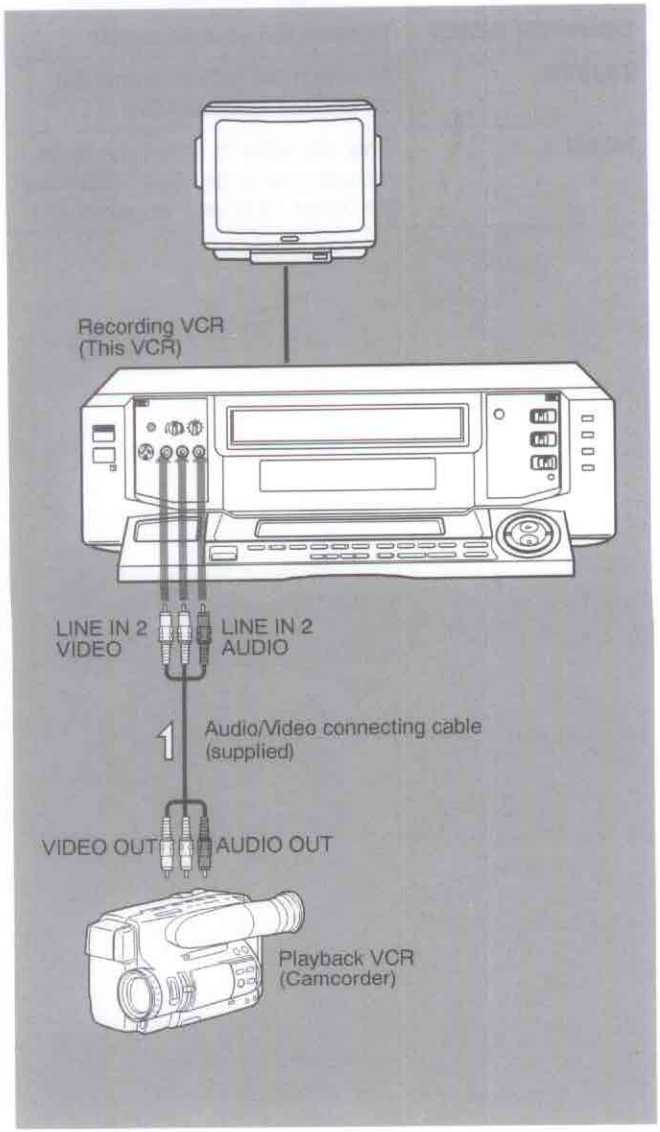
Buttons Operable During Quick-Timer Recording

TIMER REC (ON/OFF)	To stop quick-timer recording
QUICK-TIMER	To change recording duration
COUNTER RESET	To reset the counter to zero
TV/VTR	To watch the picture broadcast on another channel (TV)
MENU	Only operable to check the timer recording settings. (See "Checking the Timer Settings," on page 41.)

Using an additional VCR, you can record programs from one VCR to the other. Here's how:

Editing from Another VCR

Here's how to edit from another VCR (such as an 8mm camcorder for playback) when using this VCR for recording.



Before you start:

- Select LINE 1, 2 or 3 with INPUT SELECT, whichever the playback VCR is connected to.
- Select LINE IN 1 VIDEO "STD" or LINE IN 3 VIDEO "STD" in the SET UP MENU depending on your connection method when you connect this VCR and other VCR.
- Select SP or EP with TAPE SPEED.
- Press EDIT to light the EDIT indicator in the display window.

NOTE:
If your playback VCR has an editing function, this function should also be selected to avoid deterioration of picture quality.

How to edit:

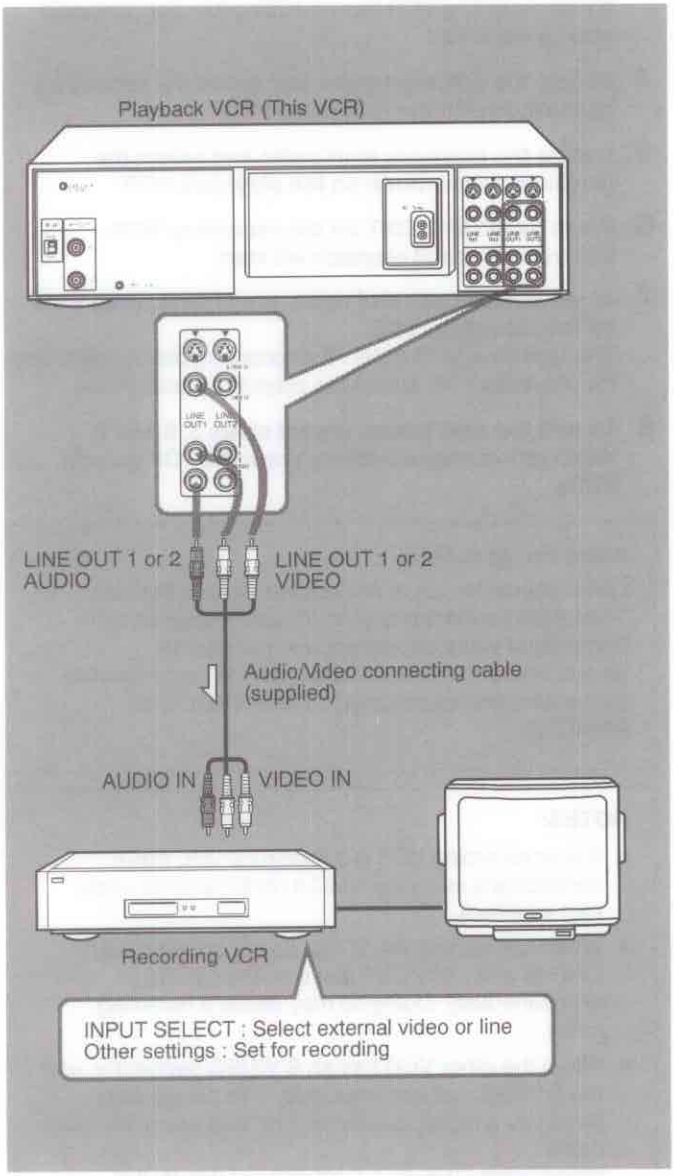
1. **Insert a blank cassette into the recording VCR with a safety tab in place.**
2. **Turn on the playback VCR and insert a source cassette.**
3. **Locate the playback start point and select the playback pause mode on the playback VCR.**
4. **Locate the recording start point and select the recording pause mode on the recording VCR.**
5. **Press ❚❚ PAUSE on both VCRs.**
   For best results, press ❚❚ PAUSE on the playback VCR just before pressing ❚❚ PAUSE on the recording VCR.
   When you've finished editing, press ■ STOP on both VCRs.
   When you release the recording pause mode, the APC function may not operate.
   For details, see page 53.

NOTES:

- If your playback VCR is a stereo unit, make connections with the supplied audio/video connecting cable.
- If your playback VCR is a monaural unit, connect the white plug to LINE IN 2 AUDIO L on this VCR. This lets you record the sound of the playback VCR on both channels of this VCR. Do not connect the white plug to LINE IN 2 AUDIO R.
- When connecting the VCRs, do not connect both LINE IN and LINE OUT jacks on your VCRs simultaneously. Doing so may cause a humming noise.
- Tapes recorded using the APC function are played back normally on VCRs that do not have the APC function.
- If you have set the EDIT button to ON, the APC function does not operate when playing back a tape but does operate when recording.
  When you are editing tapes (dubbing) using this unit as either the recording VCR or the playback VCR, use the EDIT setting.
- When the other VCR has an S VIDEO connector, use the S VIDEO connecting cable. This connection gives you a higher quality picture than using the video cable. When using LINE IN 1 S VIDEO or LINE IN 3 S VIDEO, select LINE IN 1 VIDEO "S" or LINE IN 3 VIDEO "S" in the SET UP MENU depending on your connection method.
- *If you use the VIDEO IN jack and S VIDEO IN connector at the same time when you use LINE IN 2, the S VIDEO IN connector takes priority.*

Editing onto Another VCR

Here's how to use this VCR as the playback VCR and another VCR as the recording VCR.



Before you start:

- **Press EDIT to light the EDIT indicator in the display window.**
  If your recording VCR has an editing function, it should also be selected to improve reception.
- Select AUTO DISPLAY OFF in the SET UP MENU screen and press DISPLAY several times until the on-screen display disappear from the TV screen.

How to edit:

1 **Turn on the recording VCR and insert a blank cassette with a safety tab in place.**

2 **Insert a source cassette into the playback VCR.**

3 **Locate the playback start point and select the playback pause mode on the playback VCR.**

4 **Locate the recording start point and select the recording pause mode on the recording VCR.**

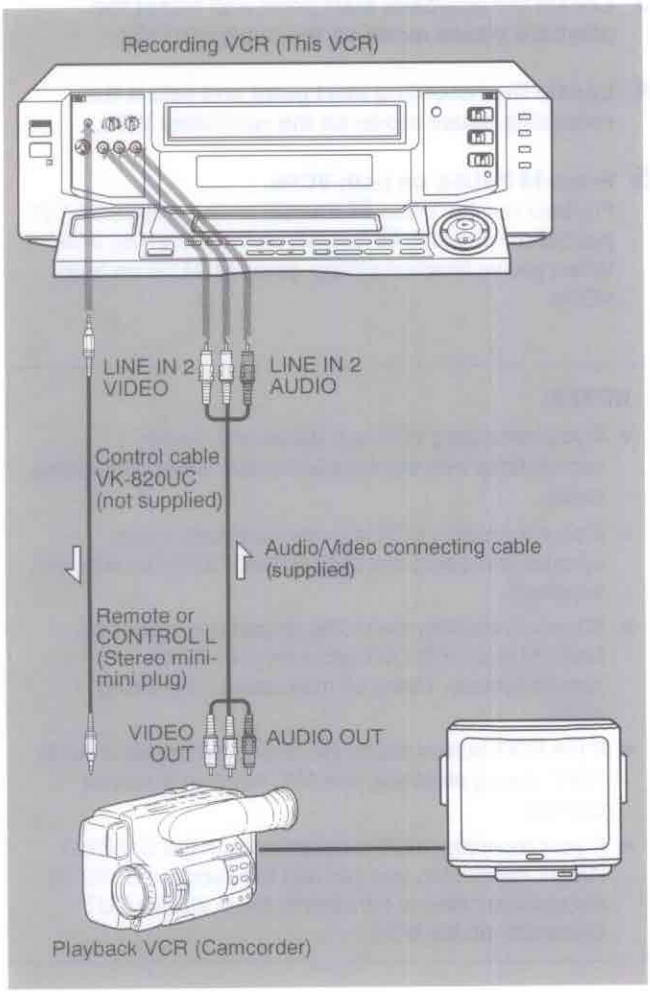
5 **Press ❚❚ PAUSE on both VCRs.**
For best results, press ❚❚ PAUSE on the playback VCR just before pressing ❚❚ PAUSE on the recording VCR. When you've finished editing, press ■ STOP on both VCRs.

NOTES:

- If your recording VCR is a stereo unit, make connections with the supplied audio/video connecting cable.
- If your recording VCR is a monaural unit, make connections using the VMC-910HG/920HG cable (not supplied).
- When connecting the VCRs, do not connect both LINE IN and LINE OUT jacks on your VCRs simultaneously. Doing so may cause a humming noise.
- If the EDIT button inside the drop-down panel is set to "ON" during playback, the APC function does not operate.
- If your recording VCR is equipped with the S VIDEO INPUT connector, you can use the supplied S VIDEO connecting cable to connect to the S VIDEO OUT connector on the VCR.

Synchronized Editing

If your other VCR has a CONTROL L or S connector, you can take advantage of a feature called "Synchronized Editing". Synchro-Edit controls both VCRs (recording VCR and playback VCR), and releases the pause when SYNCHRO EDIT is pressed. To use this function, you must connect the control cable in addition to connecting the audio and video cables. There are two types of control cables; the CONTROL L (REMOTE) cable and the CONTROL S cable. Use the one corresponding to the type of connector on the VCR.
If you want to make the CONTROL L connection, you must choose the LANC MODE in the SET UP MENU screen. (For details, see page 28.) If you want to control another VCR from this VCR, set the LANC MODE to "M" for this VCR and "S" for another VCR.
If you want to make the CONTROL S connection, you must connect the CONTROL S IN of this VCR to the CONTROL S OUT of other VCR. (For details, see page 59.)



Before you start:
- Select external video or LINE on the recording VCR.
- Make necessary settings for recording.

How to edit:

1 **Turn on the recording VCR and insert a blank cassette.**

2 **Insert a source cassette into the playback VCR.**

3 **Select EDIT position to light the EDIT indicator in the display window.**
If your recording VCR has an editing function, it should also be selected.

4 **Locate the edit start point and select the recording pause mode on the recording VCR.**

5 **Locate the playback start point and select the playback pause mode on the playback VCR.**

6 **Press SYNCHRO EDIT on the recording VCR.**
Both recording and playback will start.

7 **At the desired edit end point, press SYNCHRO EDIT on the recording VCR.**
The recording VCR enters the recording pause mode and the playback VCR enters the playback pause mode.

8 **To edit the next scene, repeat steps 5, 6 and 7.**
When you've finished editing, press ■ STOP on both VCRs.

About the (LANC)

LANC stands for Local Application Control System. The LANC connector is used for controlling the tape transport of video equipment and peripherals connected to it. This connector has the same function as the connectors indicated as CONTROL L or REMOTE.

NOTES:

- If your recording VCR is a monaural unit, make connections using the VMC-910HG/920HG cable (not supplied).
- When connecting the VCRs, do not connect both LINE IN and LINE OUT jacks on your VCRs simultaneously. Doing so may cause a humming noise.
- When the other VCR has an S VIDEO connector, use the S VIDEO connecting cable. This connection gives you a higher quality picture than using the video cable.
  When using LINE IN 1 S VIDEO or LINE IN 3 S VIDEO, select LINE IN 1 VIDEO "S" or LINE IN 3 VIDEO "S" in the SET UP MENU depending on your connection method.
  If you use the VIDEO IN jack and S VIDEO IN connector at the same time when you use LINE IN 2, the S VIDEO IN connector takes priority.
- You cannot set the LANC MODE to "M" for the camcorder. Set the LANC MODE to "M" for this VCR and control the camcorder from this VCR.
- If you set the LANC MODE to the same setting position for both this VCR and another VCR, it is possible that there may be a malfunction. Do not use the same LANC MODE setting for both VCRs.

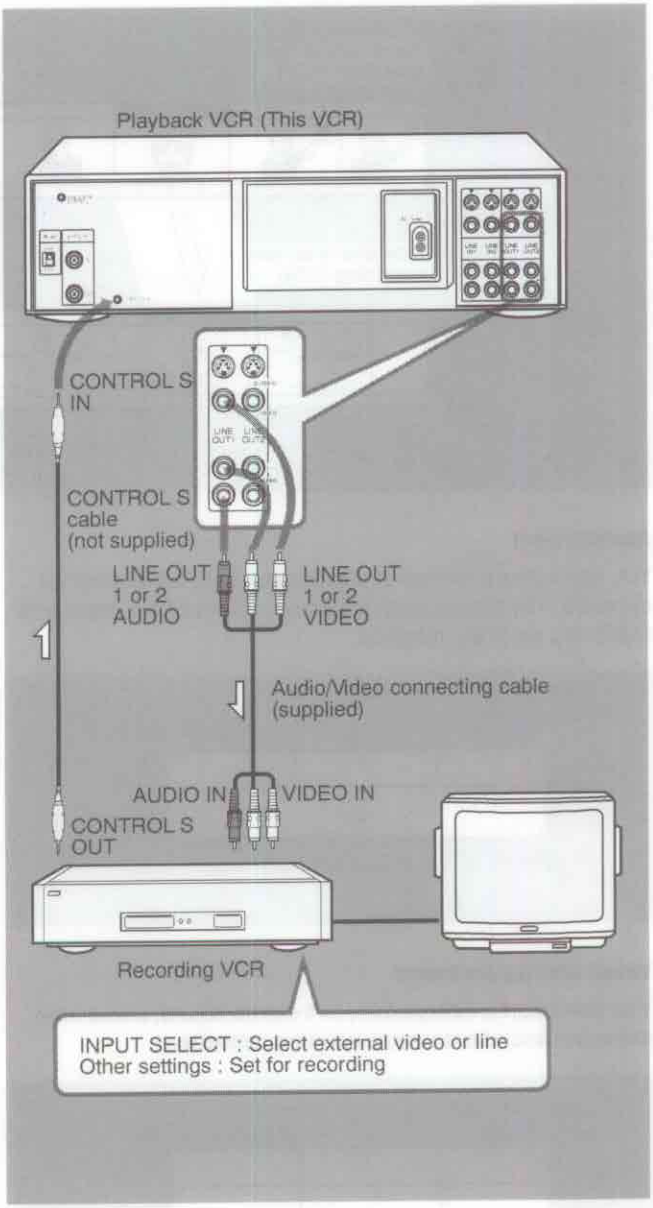
(Continued)

NOTES:

- If the other VCR has the LANC connector and the CONTROL S OUT connector, use the LANC connector. Do not make the LANC and CONTROL S connections simultaneously.
- If other VCR has the REMOTE jack without LANC or , you may not control other VCR from this VCR.
- You cannot perform synchronized editing on the CCD-V8, V8AFU and EV-C8.
- If the tape recording condition of other VCR (playback VCR) is bad, the output picture of this VCR (recording VCR) may become a blue screen on the TV screen for a moment. It is not an indication of malfunction.
- When you record a stereo/bilingual tape source from other VCR, set the audio output of other VCR so that both the main and sub sounds are output.
- When connecting with camcorder such as the CCD-TR101, CCD-TR200 and CCD-TR500, you can take advantage of more precise synchronized editing.

When Using the CONTROL S Cable

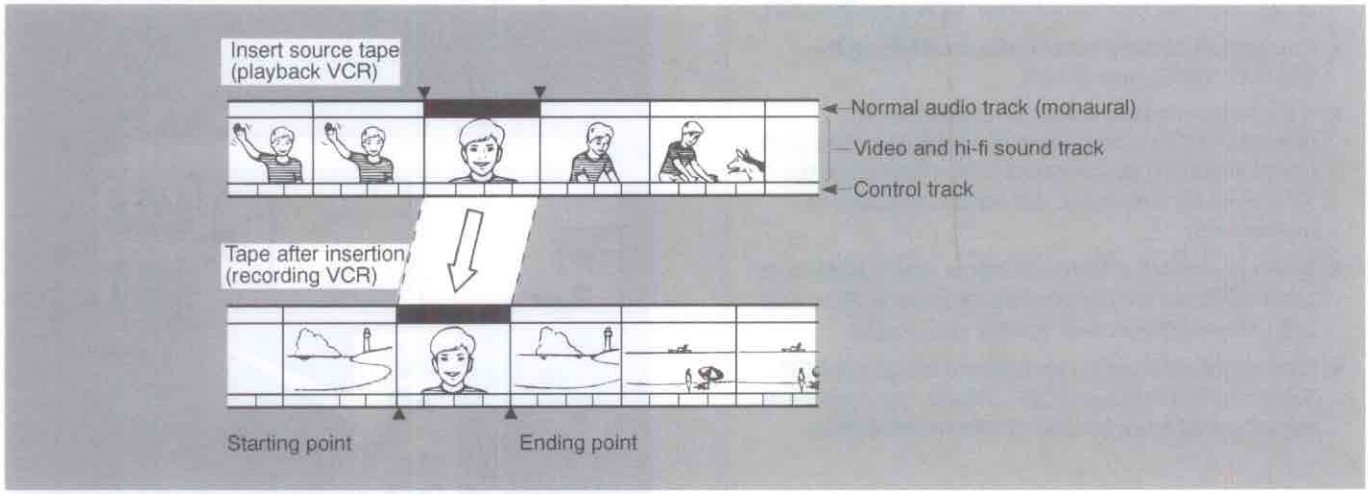
Set the command mode of this VCR and the other video equipment to the same position. If the other video equipment has a synchronized edit function, use SYNCHRO EDIT on the other equipment.


Playback VCR (This VCR)
CONTROL S IN
CONTROL S cable (not supplied)
LINE OUT 1 or 2 AUDIO
LINE OUT 1 or 2 VIDEO
1
Audio/Video connecting cable (supplied)
AUDIO IN
VIDEO IN
CONTROL S OUT
Recording VCR
INPUT SELECT : Select external video or line
Other settings : Set for recording

Insert Editing

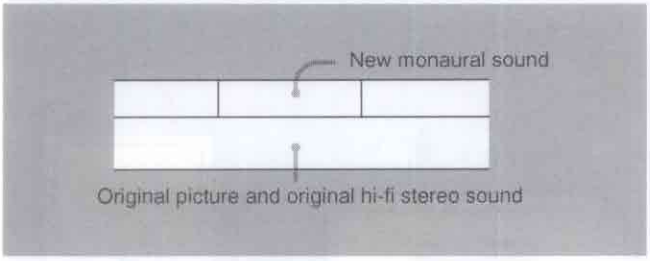
When you want to replace one prerecorded scene (and its sound) with another, you can use your SLV-R1000's insert editing function. This function lets you make either video inserts, audio inserts, or both video and audio inserts.

How the Insert Editing Function Works



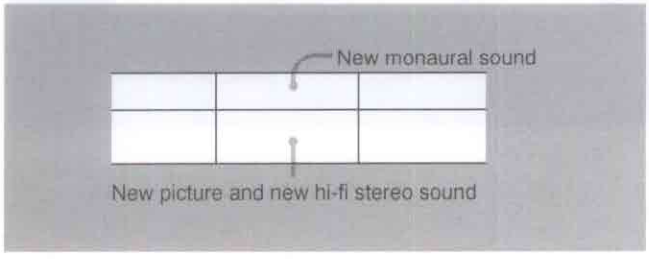
Audio Insert

You can insert a monaural sound track onto a prerecorded cassette. The picture and hi-fi stereo sound of the video and hi-fi audio track are retained.



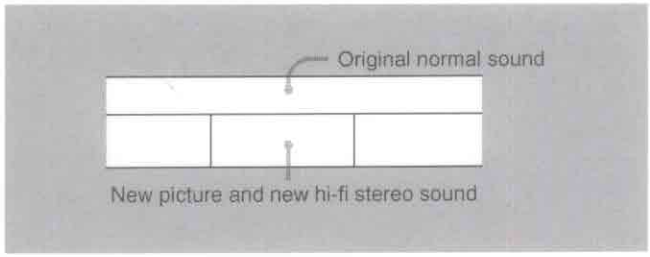
Video and Audio Insert

You can insert a new picture, hi-fi stereo sound, and a new monaural sound onto a prerecorded cassette.



Video Insert

You can insert a new picture and hi-fi stereo sound from a video and hi-fi audio track onto a prerecorded cassette. Note that the original audio track is retained.

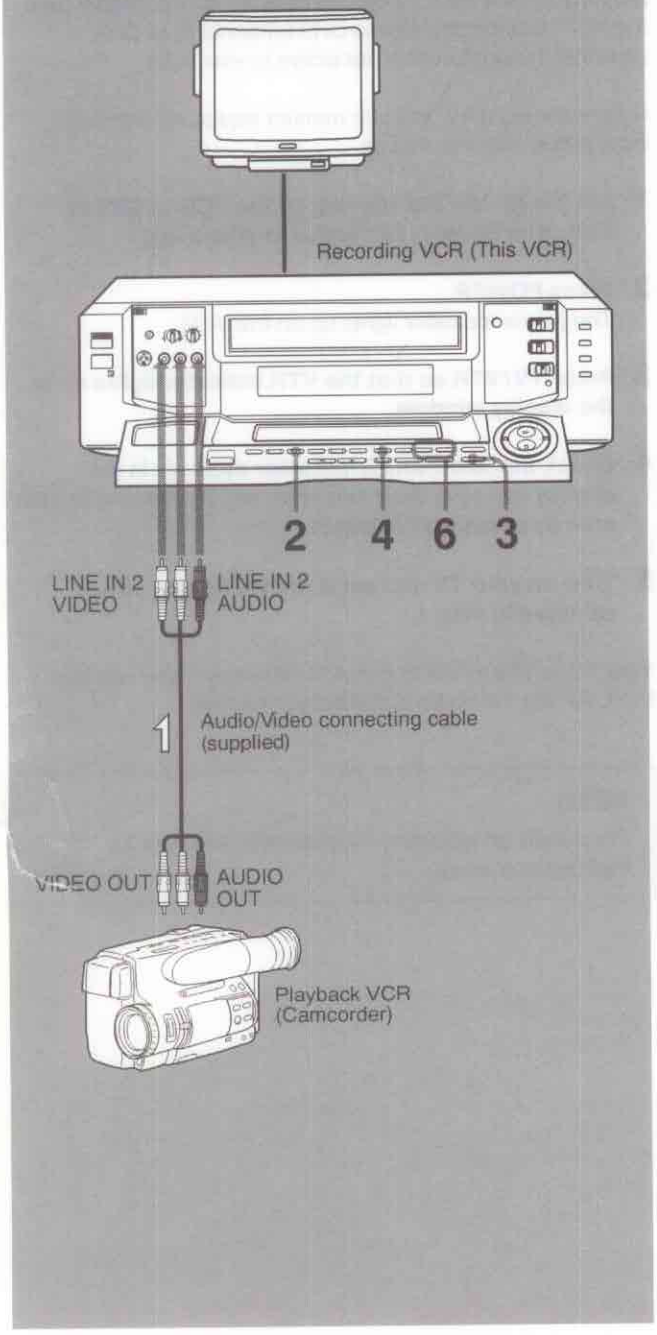


Insert Indicators and On-screen Display

Insert	Indicator	On-screen Display
Audio	A INSERT lights up	A INS
Video	V INSERT lights up	V INS
Audio/ video	AV INSERT lights up	AV INS

Insert Editing from another VCR

Example: From an 8mm camcorder to this VCR.



Before you start:

- For connection, see pages 57 through 58. (The CONTROL L connections are not needed.)
- Select the insert source from the equipment connected to LINE IN 1, 2 or 3.
- Connect the VCR to an audio system for "audio insert."

How to edit:

1 **Insert a source cassette into the playback VCR and a cassette for recording into this VCR.**

2 **Press EDIT to light the EDIT indicator in the display window.**
If your playback VCR has an editing function, it should also be selected.

3 **On the recording VCR locate the edit end point, then press ❚❚ PAUSE on this VCR.**

4 **Press COUNTER RESET on the recording VCR.**

5 **On the recording VCR, rewind the cassette to locate the starting point and set the VCR to the playback pause mode.**
The DUAL MODE SHUTTLE ring is useful for locating a desired starting point.

6 **Press VIDEO/AUDIO INSERT.**
For audio insert, press AUDIO. The "A INSERT" lights up in the display window.
For video insert, press VIDEO. The "V INSERT" lights up in the display window.
For audio and video insert, press the AUDIO and then VIDEO. The "AV INSERT" lights up in the display window.

7 **On the playback VCR, locate the starting point where you want to start the insertion and set the VCR to the playback pause mode.**

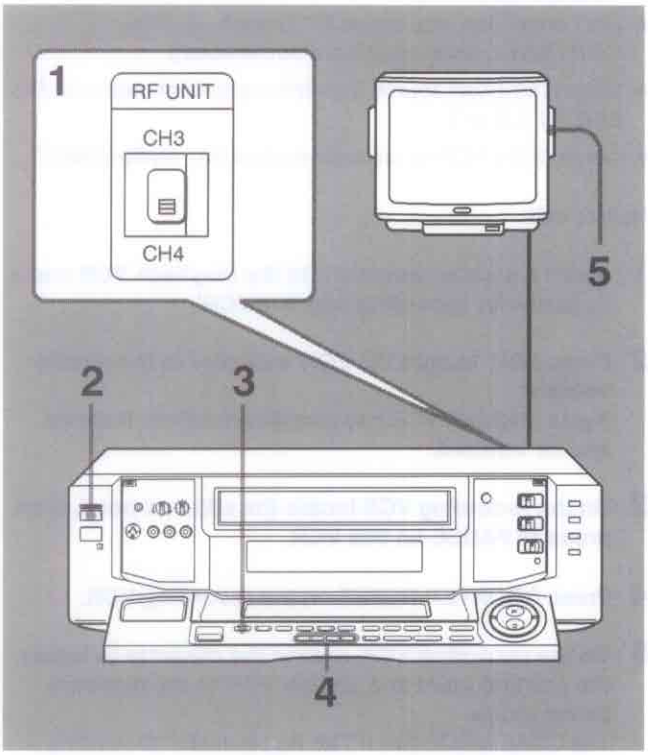
8 **Press ❚❚ PAUSE on both VCRs to start the insertion.**
At the ending point (0H00M00S), the insertion stops automatically. (To stop playback, press ■ STOP.)

To stop the insertion temporarily:
Press ❚❚ PAUSE.
To stop ongoing insertion:
Press ■ STOP.

NOTES:

- The video/audio inserts cannot be made onto an unrecorded portion of a cassette.
- After the insertion, the previous picture and/or sound will be erased.

Setting the RF Unit



Why this setting is necessary:

You must set the RF UNIT selector at the rear of the VCR properly so that your TV can receive the correct signal from the VCR. Set the selector to CH3 (channel 3) or CH4 (channel 4), whichever is not active in your area.

If you connect a TV, or color monitor equipped with A/V input jacks, skip this setting.

1 **Set the RF UNIT at the rear of the VCR to CH3 or CH4, whichever is not active in your area.**

2 **Press POWER.**
The power indicator lights up on the VCR.

3 **Press TV/VTR so that the VTR indicator lights up in the display window.**

4 **Check that the TUNER indicator appears in the display window, then select an active channel in your area by pressing CHANNEL +/−.**

5 **Turn on your TV and set it to the channel you selected in step 1.**

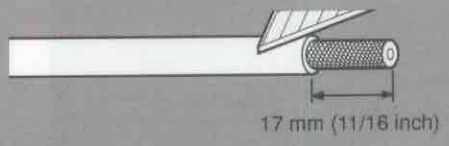
Your TV is now tuned to the VCR. Whenever you use the VCR, set the TV to the preselected channel.

NOTE:

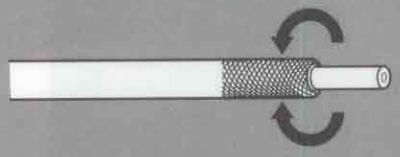
For details on adjusting TV channels, see your TV instruction manual.

Attaching the F-Type Connector (not supplied)

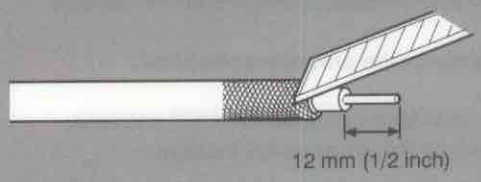
1 Strip 17mm (11/16″) of the black polyvinyl jacket.



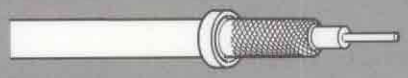
2 Fold back the woven wire.



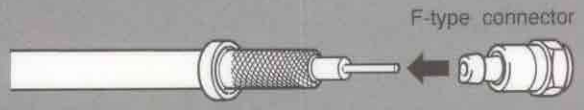
3 Strip 12 mm (1/2″) of the white plastic casing, leaving 12 mm of the center conductor.



4 Slip the crimping ring over the cable.

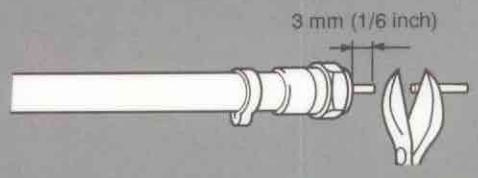


5 Insert the liner conductor into the F-type connector shaft and push the end of the cable into the connector as far as it will go.

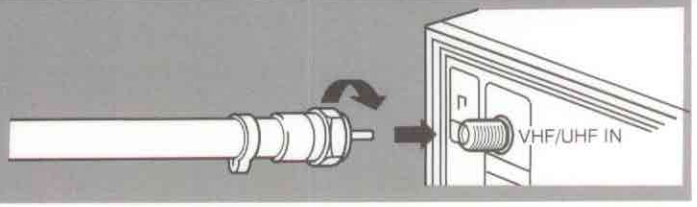


6 Slide the crimping ring over this assembly. Pinch the crimping ring with pliers to hold the connection in place.

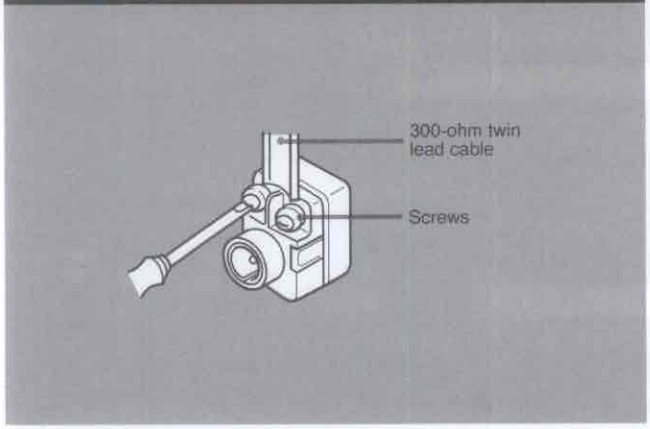
7 Cut the center conductor leaving 3mm (1/16″) from the end.



8 Insert the F-type connector into VHF/UHF IN plug on the VCR.



Attaching the External Antenna Connector (supplied)

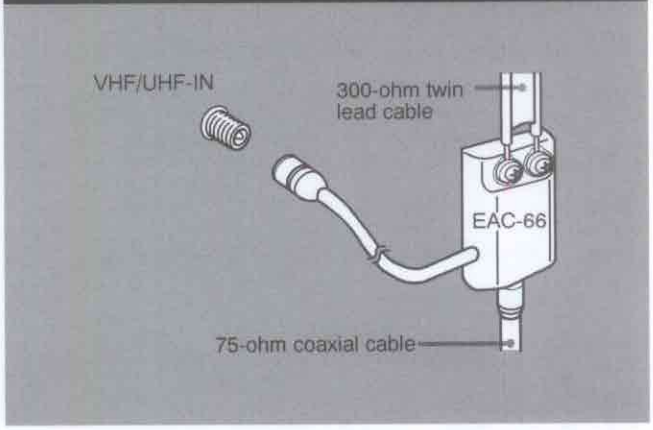


1 Loosen the screws on the antenna connector.

2 Fit the 300-ohm twin lead cable on the UHF antenna under the screws on the antenna connector.

3 Retighten the screws.

Attaching the EAC-66 U/V Band Separator/Mixer (not supplied)



1 Loosen the screws on the U/V band separator/mixer.

2 Fit the 300-ohm twin lead cable on the UHF antenna under the screws.

3 Retighten the screws.

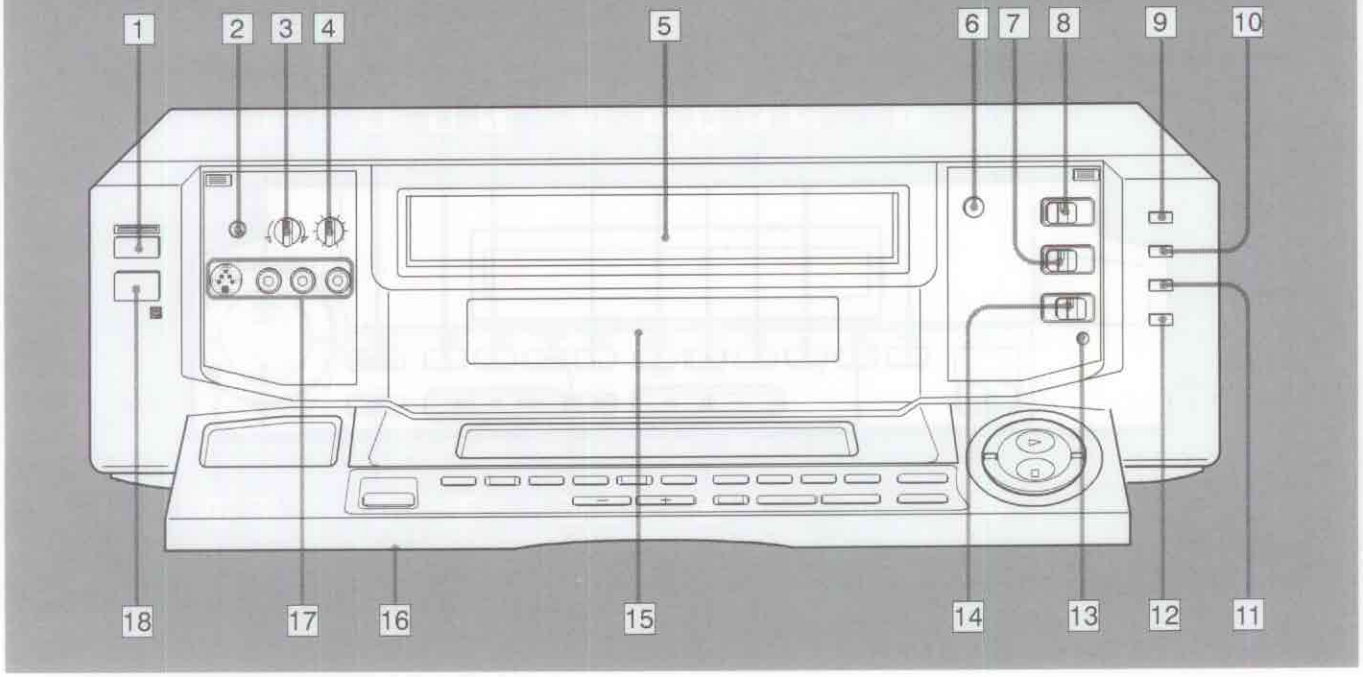
4 Connect the 75-ohm coaxial cable to the U/V band separator/mixer.

5 Connect the U/V band separator/mixer to the VHF/UHF IN plug on the VCR.

Identifying the Parts and Controls

Refer to the pages indicated for details.

Front Panel



1 **POWER ON/OFF switch and indicator (see page 62.)**

2 **CONTROL L jack (stereo mini-mini jack) (see page 58.)**

3 **SHARPNESS SOFT/SHARP control (see page 32.)**

4 **REC LEVEL control (see page 34.)**

5 **Cassette compartment (see page 29.)**

6 **APC ON/OFF button (see page 53.)**

7 **BACKLIGHT switch**
This switch controls the brightness of the backlight in three stages (OFF, DIM, BRT).

8 **S-VHS ON/OFF switch (see page 4.)**

9 **APC indicator (see page 53.)**

10 **SYNCHRO EDIT indicator (see page 58.)**

11 **REC indicator (see page 34.)**

12 **TIMER REC indicator (see page 38.)**

13 **CL (clear) button (see page 71.)**

14 **COMMAND MODE VTR 1/2/3 (OFF, 1, 2, 3) switch (see page 16.)**

15 **Display window (see page 68.)**

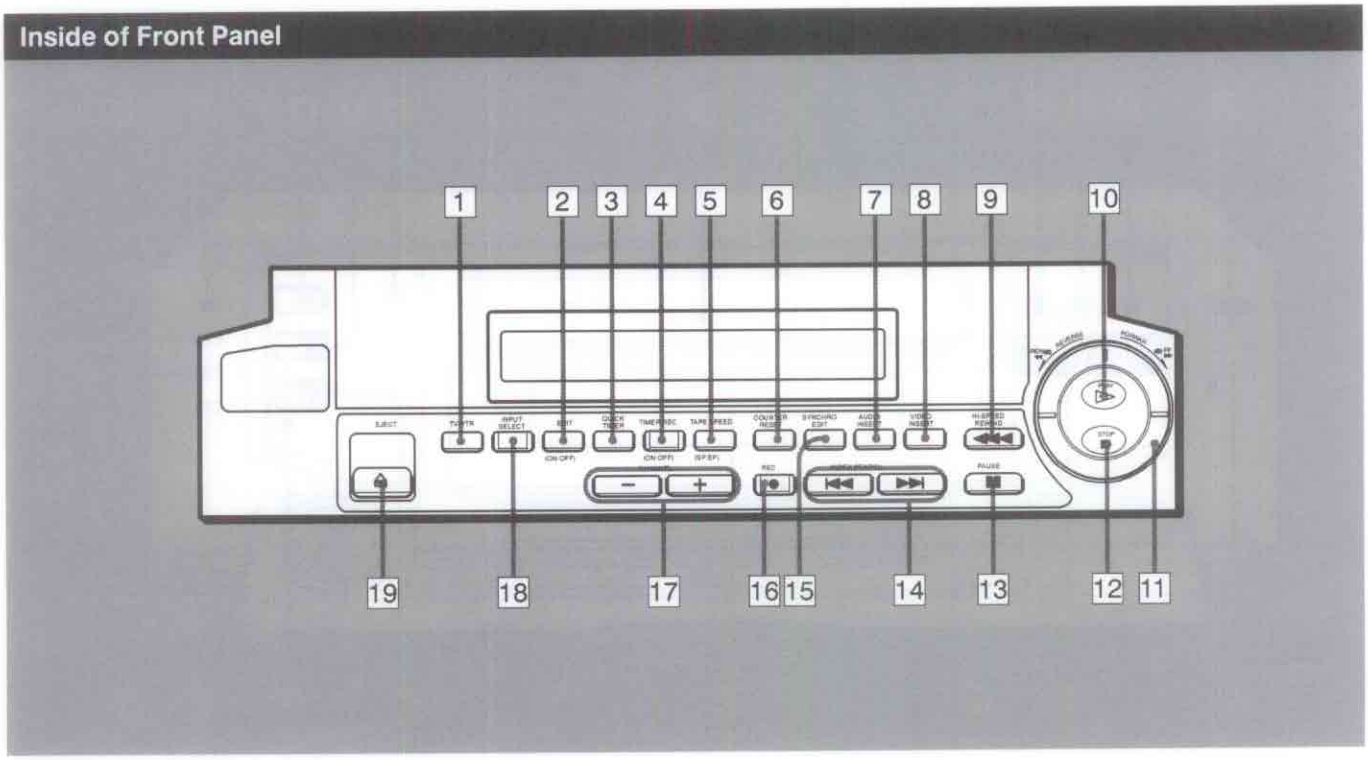
16 **Drop-down panel (see page 66.)**

17 **LINE IN 2 S VIDEO connector, VIDEO and AUDIO (phono type) jacks (see pages 56 and 58.)**

18 **Remote sensor (see page 16.)**

Refer to the pages indicated for details.

Inside of Front Panel



1 TV/VTR button (see pages 21 and 36.)

2 EDIT (ON/OFF) button (see pages 57, 58 and 61.)

3 QUICK TIMER button (see page 54.)

4 TIMER REC (ON/OFF) button (see pages 38 to 43.)

5 TAPE SPEED (SP/EP) button (see page 34.)

6 COUNTER RESET button (see page 31.)

7 AUDIO INSERT button (see page 61.)

8 VIDEO INSERT button (see page 61.)

9 ◀◀◀ HI-SPEED REWIND button (see page 30.)

10 ▶ PLAY button (see page 30.)

11 DUAL MODE SHUTTLE ring (see page 48.)

12 ■ STOP button (see pages 30 and 34.)

13 ❚❚ PAUSE button (see pages 30, 34 and 48.)

14 ⏮ ⏭ INDEX SEARCH buttons (see pages 51 and 52.)

15 SYNCHRO EDIT button (see page 58.)

16 ● REC button (see page 34.)

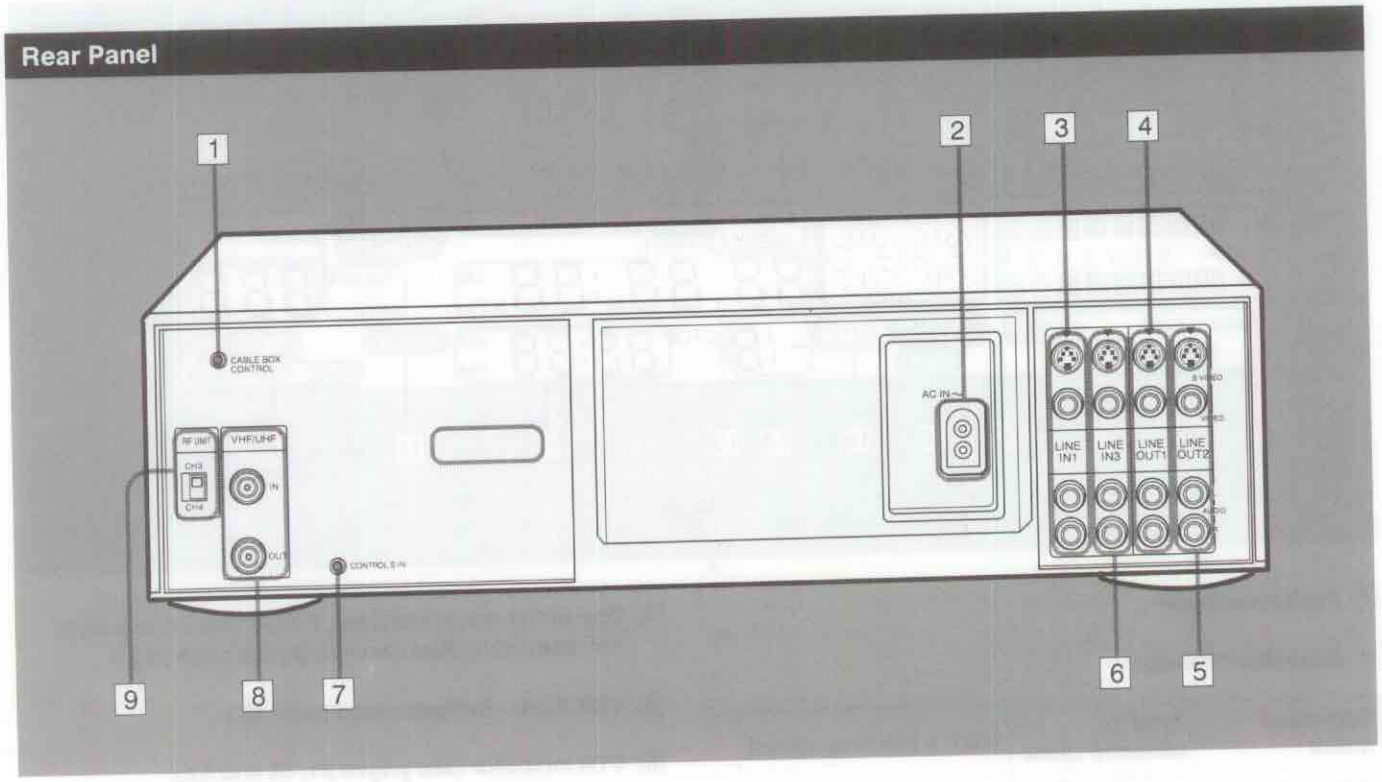
17 CHANNEL +/– buttons (page 34.)

18 INPUT SELECT button (see pages 38 and 56.)

19 ⏏ EJECT button (see page 29.)

Refer to the pages indicated for details.

Rear Panel



1 **CABLE BOX CONTROL jack (see page 8.)**

2 **AC IN socket (see page 6.)**

3 **LINE IN 1 S VIDEO connector, VIDEO and AUDIO (phono type) jacks (see page 57.)**

4 **LINE OUT 1 S VIDEO connector, VIDEO and AUDIO (phono type) jacks (see page 57.)**

5 **LINE OUT 2 S VIDEO connector, VIDEO and AUDIO (phono type) jacks (see pages 57 and 59.)**

6 **LINE IN 3 S VIDEO connector VIDEO and AUDIO (phono type) jacks (see pages 56 and 61.)**

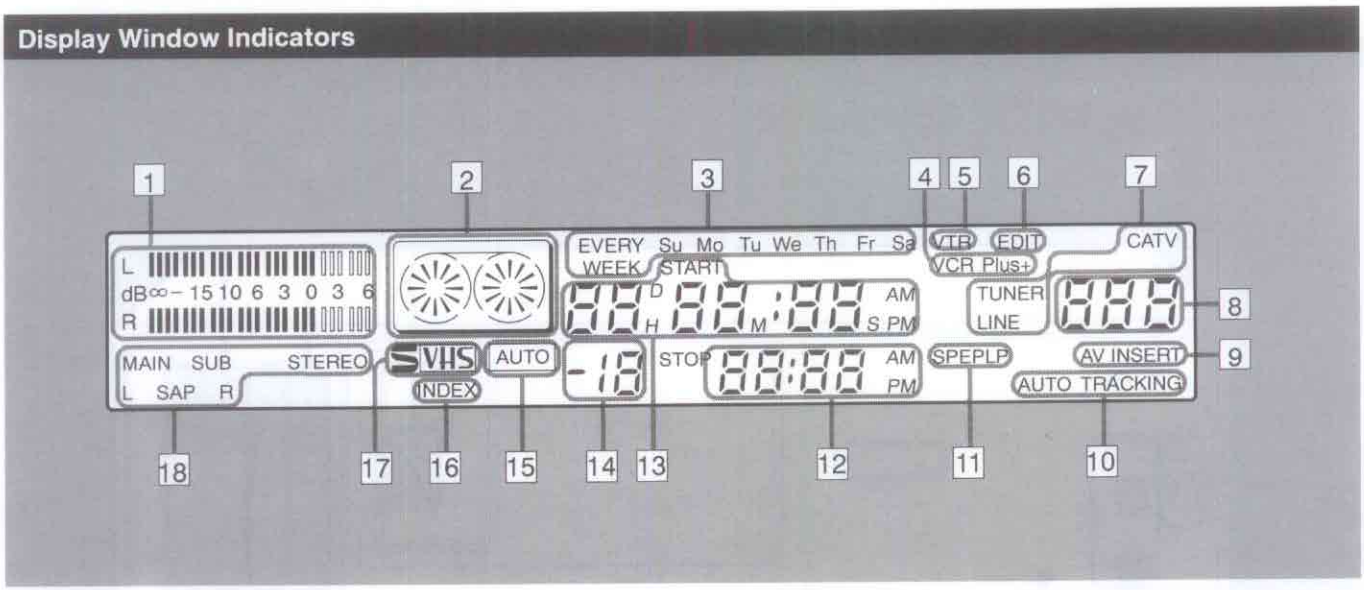
7 **CONTROL S IN jack (see page 59.)**

8 **VHF/UHF IN/OUT connectors (F-type) (see pages 8, 10, 12 and 14.)**

9 **RF UNIT selector (see page 62.)**

Refer to the pages indicated for details.

Display Window Indicators



1 Peak level meter

2 Cassette indicator

Operation mode	Type of cassette mark	Mark's rotating speed
When a cassette is inserted		does not rotate
Normal playback		rotates slowly.
Rewind		rotates fast counterclockwise.
Fast-forward		rotates fast clockwise.
Picture search (forward)		rotates fast clockwise.
Picture search (reverse)		rotates fast counterclockwise.
Stop		does not rotate.
Record		rotates slowly.
Pause		stops rotating.
Frame-by-frame		rotates at intervals
Slow motion		rotates slowly.

3 Day of the week indicator, EVERY WEEK indicator for timer-activated recording (see page 39.)

4 VCR Plus + indicator (see page 46.)

5 VTR indicator (see pages 21, 36 and 62.)

6 EDIT indicator (see pages 57, 58 and 61.)

7 Input mode indicator (see pages 34 and 56.)

8 Channel number/Input mode indicator

9 AV INSERT indicator (see page 61.)

10 AUTO TRACKING indicator (see page 32.)

11 Tape speed indicator (see page 34.)

12 Quick-timer recording time/current time/recording stop time (see pages 20, 39 and 54.)

13 Linear time counter/recording start time (see pages 31 and 39.)

14 Index/program number (see pages 50 to 52.)

15 AUTO play indicator (see page 30.)

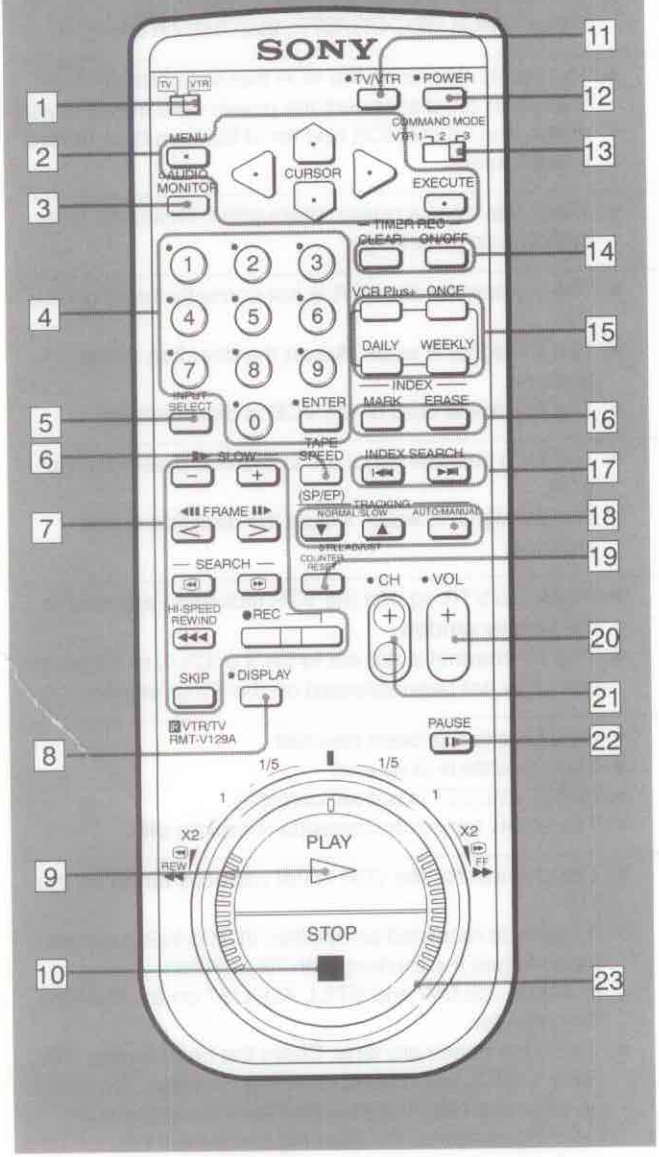
16 INDEX indicator (see pages 50 to 52.)

17 S-VHS indicator (see page 4.)

18 Stereo program/SAP indicator (see page 36.)

Refer to the pages indicated for details.

Remote Commander



1 TV/VTR remote control selector (see page 16.)

2 Menu operations buttons (see pages 19 and 21.)
MENU button
Cursor buttons (▲/▼/◀/▶)
EXECUTE button

3 AUDIO MONITOR button (see page 32.)

4 Channel number buttons and ENTER button (see page 34.)

5 INPUT SELECT button (see pages 38 and 56.)

6 TAPE SPEED (SP/EP) button (see pages 34 and 38.)

7 Tape transport buttons
I▶ SLOW –/+ buttons (see page 49.)
</> ◀II FRAME II▶ buttons (see page 49.)
⏮ / ⏭ SEARCH buttons (see page 49.)
◀◀◀ HI-SPEED REWIND button (see page 30.)
● REC button (see page 34.)
SKIP button (see page 49.)

8 DISPLAY button (see page 31.)

9 ▶ PLAY button (see page 30.)

10 ■ STOP button (see pages 30 and 34.)

11 TV/VTR button (see pages 21 and 36.)

12 POWER button (see page 62.)

13 COMMAND MODE VTR 1/2/3 selector (see page 16.)

14 TIMER REC buttons (see page 42.)
CLEAR button
ON/OFF button

15 VCR Plus + buttons (see page 46.)

16 INDEX buttons (see pages 50 to 52.)
MARK button
ERASE button

17 I◀◀ ▶▶I INDEX SEARCH buttons (see pages 51 and 52.)

18 TRACKING buttons (see pages 32 and 49.)
▼/▲ NORMAL/SLOW (STILL ADJUST) buttons
AUTO/MANUAL button

19 COUNTER RESET button (see page 31.)

20 VOL (volume) +/– buttons

21 CH (channel) +/– buttons

22 II PAUSE button (see pages 30, 34 and 48.)

23 DUAL MODE SHUTTLE ring (see page 48.)

Troubleshooting

If you have a problem with your VCR, first check the power cord connection, then go through the following list. Should the difficulty persist, unplug the unit, and contact your Sony dealer or local authorized Sony Service Center facility.

	Symptom	Possible causes and remedies
Power	The POWER switch doesn't work.	• The power cord is disconnected. • The VCR is in the timer standby mode. Press TIMER REC ON/OFF, then turn on the VCR.
	The power is turned on but the VCR doesn't work.	• The safety device on the VCR has switched on. Turn the power off, disconnect the power cord from the wall outlet, and let the VCR rest for at least an hour before trying it again.
Time and Date Clock	The clock has stopped and " - : - - " lights up.	• There has been a power interruption. Reset the time, date and timer settings.
TV Reception	TV reception is poor.	• The channel for the VCR is not correctly tuned on the TV. • The TV signal is weak. Adjust the direction of the antenna. • The AC power cord of the VCR is disconnected.
Recording and Playback	Shaky and/or snowy picture during recording.	• The TV's channel is not set to the one preset for the VCR. • The TV signal is weak. Adjust the direction of the antenna.
	No picture on the TV screen.	• Press TV/VTR so that the VTR indication appears in the display window. • The TV channel is not set to Ch 3 or Ch 4, or the video input has not been selected on the TV or monitor.
	The VCR won't record.	• No cassette has been inserted. • The cassette is at its end. • INPUT SELECT is not set correctly. • The safety tab on the cassette is broken off.
	The playback picture is not clear.	• The channel for the VCR is not correctly tuned on the TV. • A cassette recorded on another VCR is being played back. Adjust the tracking with TRACKING NORMAL/SLOW and STILL ADJUST on the Remote Commander. • The video heads are dirty. Clean the heads using the Sony T-25CL video head cleaning cassette. For details on cleaning, refer to the instructions furnished with the cleaning cassette. If a cleaning cassette is not available in your area, have the heads cleaned at your nearest Sony Service Center facility. With this service, there would be a standard charge. (Do not use a commercially-available wet-type cleaning cassette. It may cause damage to the video heads.) • The video heads are worn out.

	Symptom	Possible causes and remedies
Recording and Playback	The picture moves vertically during picture search mode.	• Adjust the vertical hold control on the TV or color monitor.
	The sound drops out.	• The cassette is defective. Use a new video cassette.
	Stereo recording cannot be made.	• AUTO STEREO is set to "OFF" in the SET UP MENU.
	Both main and SAP sounds are heard when playing back a cassette on which an MTS broadcast was recorded.	• AUDIO MIX is set to "ON" in the SET UP MENU.
	No sound is recorded on the normal audio track.	• NORMAL AUDIO is set to "SAP" in the SET UP MENU when there is no SAP broadcast.
Timer Recording	Timer setting cannot be made.	• The current time has not been preset.
	The TIMER REC (recording) lamp is not lit even though you've pressed TIMER REC (ON/OFF).	• No cassette has been inserted. • The cassette is at its end. • No setting for timer-recording has been made.
	The cassette is ejected when you press TIMER REC (ON/OFF).	• The safety tab of the cassette has been removed.
	Timer recording was not made.	• There has been a power interruption of three hours or more. • TIMER REC (ON/OFF) was not pressed. • CABLE BOX CONTROL setup was not done or was done incorrectly. • The cable box was not turned on when recording started. • The cable box is not receiving the control signal from the VCR. Reposition the cable box away from the VCR. Make sure that the Cable Mouse is attached as shown on page 8.
On-Screen Display	The On-Screen Display does not appear on the screen.	• Press DISPLAY.
Others	Cassette cannot be inserted.	• A cassette has already been inserted.
	The Remote Commander cannot be operated.	• The batteries are low.
	The tracking indicator does not appear on the screen.	• Press DISPLAY. • The recording condition of the cassette is very poor and tracking cannot be adjusted.
	On-screen help message appears on the TV screen.	• An illogical operation has been tried. Follow the message shown on the TV screen.
	The VCR does not respond when you press any button.	• The built-in microprocessor may be defective. Pressing the CL (clear) button inside the drop-down panel with a pointed object such as a ballpoint pen, may fix the problem. All stored information (e.g., the clock and any preset programs) will be erased.
	The channels on the VCR cannot be changed.	• The CABLE BOX CONTROL is set to "ON." Set the CABLE BOX CONTROL to "OFF."
	When doing synchronized editing, you cannot control the other VCR from this VCR.	• The LANC mode of the other VCR is set to "S". • The LANC mode of this VCR is set to "M".

Specifications

System

Format	VHS NTSC standard
VIdeo Recording System	Rotary two-head helical scanning FM system.
Video Head	Four heads
Video signal	NTSC color, EIA standards
Tape Speed	SP: 33.35 mm/s (1 3/8 inches/s) EP: 11.11 mm/s (7/16 inches/s) LP: 16.67 mm/s (11/16 inches/s) Playback only
Maximum recording/ playback time	9 hrs in EP mode (with T-180 tape)
Fast-forward and rewind time	Approx. 4 min 30 s (with T-120 tape)
High-speed rewind time	Approx. 3 min (with T-120 tape)

Tuner Section

Channel Coverage	VHF channels 2 to 13 UHF channels 14 to 69 CATV channels A-8 to A-1, A to W, W+1 to W+84
Antenna	75-ohm antenna terminal for VHF/UHF

Inputs and Outputs

LINE IN 1, 2 and 3	S VIDEO IN (4-pin mini DIN) (1 each) Y: 1 Vp-p 75 ohms (unbalanced), sync. negative C: 0.286 Vp-p (color burst) 75 ohms (unbalanced) VIDEO IN (phono jack) (1 each) Input signal: 1 Vp-p, 75 ohms, unbalanced, sync negative AUDIO IN (phono jack) (2 each) Input level: −7.5 dBs (0 dBs = 0.775 Vrms) Input impedance: more than 47 kilohms
LINE OUT 1 and 2	S VIDEO OUT (4-pin mini DIN) (1 each) Y: 1 Vp-p 75 ohms (unbalanced), sync. negative C: 0.286 Vp-p (color burst) 75 ohms (unbalanced) VIDEO OUT (phono jack) (1 each) Output signal: 1 Vp-p, 75 ohms, unbalanced, sync negative AUDIO OUT (phono jack) (2 each) Standard output: −7.5 dBs at load impedance 47 kilohms Output impedance: less than 10 kilohms
CONTROL S IN	Minijack (1)

Timer Section

Clock	Quartz locked
Time Indication	12-hour cycle
Timer Setting	Only for recording 8 programs in one month at max.
Power back-up	Built-in self-charging capacitor Back-up duration: Up to three hours at one time

General

Power requirements	120 V AC, 60 Hz
Power consumption	30 W (max.) 11 W (in standby condition)
Operating temperature	5°C to 40°C (41°F to 104°F)
Storage temperature	−20°C to 60°C (−4°F to 140°F)
Dimensions	430 × 117 × 379 mm (w/h/d) (17 × 4 5/8 × 15 inches)
Weight	7 kg (15 lb 7 oz)

Wireless Commander RMT-V129A

Remote control system	Infrared control
Power requirements	3 V DC, 2 size AA batteries (IEC designation R6)

Accessories Supplied

Wireless Commander RMT-V129A ..... (1)
Size AA (R6) batteries ..... (2)
75-ohm coaxial cable with F-type connectors ..... (1)
External antenna connector ..... (1)
AC power cord ..... (1)
Audio/video connecting cable (3 phono to 3 phono) ..... (1)
S VIDEO connecting cable ..... (1)
Cable Mouse (Cable Box Controller) ..... (1)

Design and specifications are subject to change without notice.

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If you have any questions about this product, you may call:
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